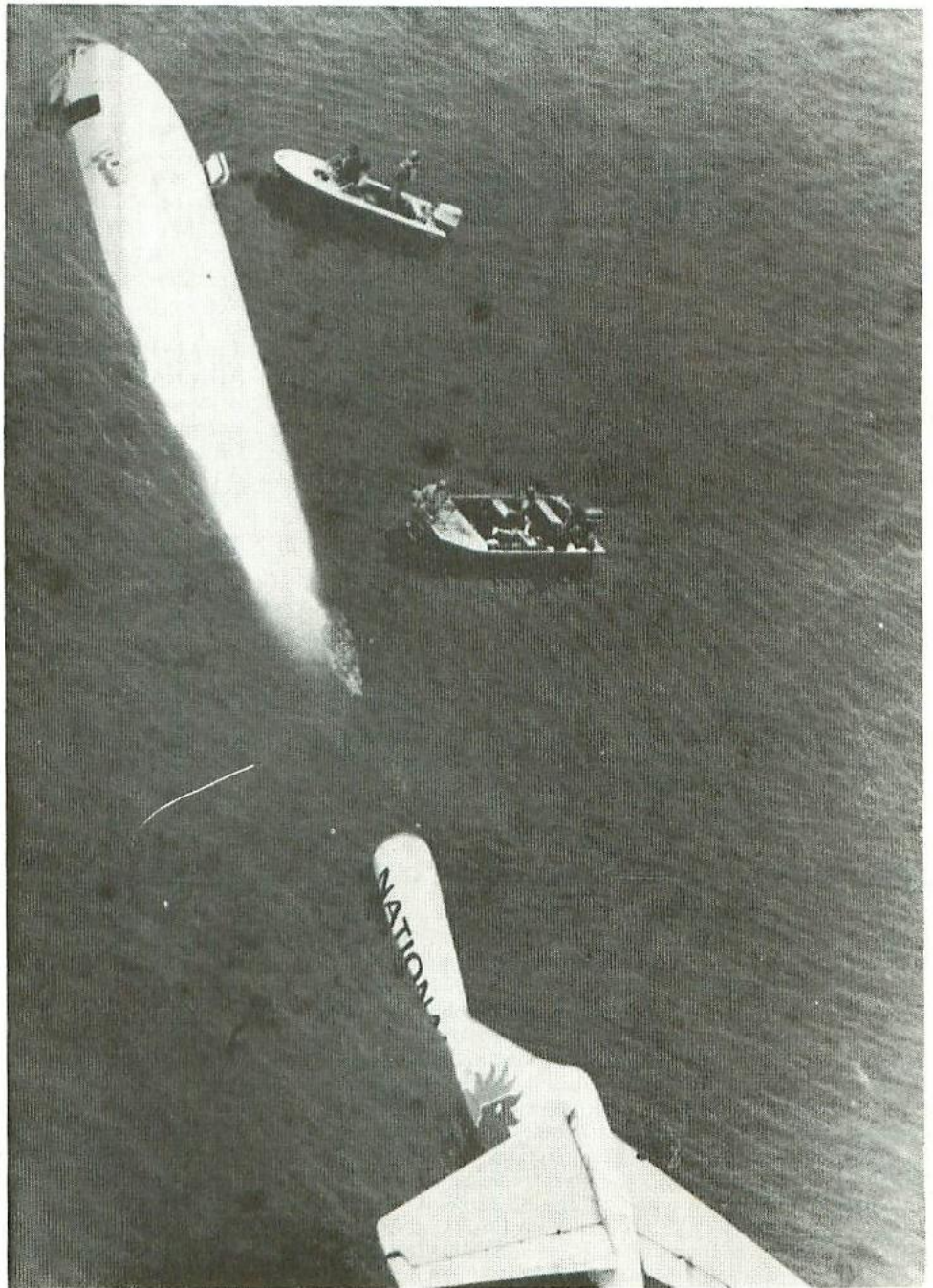


SPRING 1981

SEARCH & RESCUE

MAGAZINE

"Aircraft Crashworthiness — How Inferior To The Automobile," is addressed in critical NTSB report on Page 7



SEARCH AND RESCUE MAGAZINE
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PUBLISHER'S FORUM

By DENNIS E. KELLEY

It is weather that is the frequent cause of SAR missions. For the most part little attention is given to predicting weather hazards and warning the public by the SAR community. There are notable exceptions which include the U.S. Weather Bureau doing alerts on tornadoes, flash floods, etc. For many years some mountain rescue teams instituted regular patrols in the snow season. Who is taking the public relations lead on local weather related incidents such as the first hot spell driving out poisonous snakes? Interestingly, a nice SAR related company does regularly distribute a long range weather forecast with its newsletter and I would like to commend that company, the Logan Division of De Lorean Manufacturing Company, 2503 North Main Street, P.O. Box 407, Longa, UT 84321. 801/753-0220. *

NEWS AND RUMORS

LIFE FLIGHT MAKES DEMO TRIP

BLAIR, NEBR.— The Life Flight helicopter made a demonstration trip to Kennard to visit with members of the Kennard Rescue Squad. The short presentation on the Life Flight was made at the Squad's meeting. The special services available through the Flight were discussed and the types of areas in which they could land was also mentioned.

Once the film and discussion was completed, a call was made by the Kennard Squad to St. Joseph's Hospital where the Life Flight is home-based. It was a short 11 minutes from the time the call went through until the Flight arrived. Squadsmen were told that in an actual emergency, that time would be cut by two-three minutes. However, since it was a demonstration flight and the pilot was eating, the flight was delayed slightly. The Life Flight has a cruising speed of about 145 miles per hour.

Cost of calling the Life Flight to an emergency in Kennard to a location near the Auditorium would be about \$107. There is a flat \$75 set-down, lift off fee for the Flight and a one way \$2 charge per air mile. Although higher than the cost of transportation by the Kennard Rescue Squad, the fact that it is available in situations where time is crucial and can be staffed by medical personnel trained to meet a specific emergency, make the cost very reasonable in a life and death situation.

Blair, Nebraska, *The Enterprise*, Aug. 28, 1980

COMPUTERS LINKED VIA AMATEUR RADIO

AMATEUR RADIO EMERGENCY SERVICES (AREA)— On January 7, at Riverside, CA, Directors of the Southern California Emergency Services Association held a special Board meeting. A demonstration was conducted by V. P. Lewis Reed who is Coordinator of Emergency Services, City of Santa Barbara, with the assistance of Fred Carlberg, N6WP, Santa Barbara Section Traffic Manager. Two Apple II computers were operated via two meter FM amateur radio to demonstrate a data base program for sheltering of evacuees from a hypothetical "crisis relocation." Discussions were held concerning the usefulness of Amateur Radio during such emergencies. Also in attendance were State of California Office of Emergency Services representatives John Taylor, W6AAH, Chief Warning Officer, and James Alexander, State Emergency Services Coordinator in Los Angeles. The demonstration was given to emergency services heads of Southern California in preparation for the development of compatible standards for use by counterpart agencies in the state.

RESCUE MISSION OF A THIRD KIND

SEIFRIDGE, ANGB, MI— Search and rescue missions usually fall into three categories: the rescue or "save" of a human life, an unsuccessful search, and the third kind, a false alarm.

Capt. Michael Sullivan and his crew from the 304th ARRS at Portland, IAP, Ore. started out 1981 with a rescue operation of the third kind. Two hikers had not returned from a climb on Mt. Hood

CALENDAR

March 21, 1981

8th ANNUAL NEW YORK STATE FEDERATION OF SAR WORKSHOP

Civil Defense Office, Oswego County Office Building, Fulton, New York.

Contact: Hans Erdman, Wilderness Rescue, P.O. Box 770, Dryden, NY 13053

April 25-26, 1981

SECOND ANNUAL OUTDOOR RECREATION EXPO

El Dorado Park, Long Beach, California

Contact: Frank Ashley, Event Coordinator, 2nd Annual Long Beach Outdoor Recreation Expo, 7550 East Spring Street, Long Beach, CA 90815
213/425-8569 (9 AM - 3 PM daily)
213/633-7821 (After 4:30 PM)

May 14-17, 1981

NAEMT FOURTH ANNUAL EDUCATIONAL CONFERENCE, Marriott Hotel, Portland, Oregon

Contact: NAEMT, P.O. Box 334, Newton Highlands, MA 02161 617/894-7179

June 8-12, 1981

AIRCRAFT CRASH MANAGEMENT COURSE

Arizona State University, Tempe, Arizona

Contact: William H. Allen, Program Director, Office of Professional Development, College of Engineering and Applied Sciences, Arizona State University, Tempe, AZ 85281 602/838-9072

June 13-14, 1981

NASAR BOARD MEETING

Dallas, Texas

Contact: Wes Reynolds, NASAR Secretary/Treasurer, P.O. Box 2123, La Jolla, CA 92038 714/268-3226

June 18-21, 1981

MOUNTAIN RESCUE ASSN. SPRING CONFERENCE McCall, Idaho

Contact: Idaho Mountain Search & Rescue Unit, Inc., P.O. Box 741, Boise, ID 83701

October 2-4, 1981

BARSTOW DESERT RESCUE SQUAD 9th ANNUAL SEARCH & RESCUE SCHOOL

Barstow, California

Contact: Barstow Desert Rescue Squad, P.O. Box 108, Barstow, CA 92311

SEARCH & RESCUE MAGAZINE provides a way for rescuers from coast to coast to keep current with significant SAR events. Every issue we run a 'Calendar' column that simply lists SAR related conferences, schools, seminars, and events sponsored in your local area. Lead time is important so let us help you by keeping us abreast of current events in your area early. #

and friends at the lodge had alerted the Hood River County, Oregon Sheriff's Department. Both missing persons were experienced hikers and had camping and survival equipment, but they had indicated they would return before nightfall. At daylight the 304th launched an HH-1 Huey helicopter to search Mt. Hood while ground teams started the search at the same time. After a half hour's search around the mountain, the reservists spotted the two climbers working their way up the mountain and alerted the ground search teams who were able to make contact with the reported "missing persons" and determine that the climbers were in no danger. It was a mission with a happy ending even though a save was not recorded.

Reprinted from U.S. Air Force News Release, 2-1-81

Continued on page 19

SEARCH & RESCUE

MAGAZINE
SPRING 1981

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ADVISORY PANEL

Emergency Medical —	Stan Bush, Colorado SAR Board President
Training —	Rick LaValla, Washington State SAR Coordinator
Communications —	Rick Goodman, New Mexico SAR Coordinator
Survival —	Gene Fear, Survival Education Assn. President, Washington State
Backpacking —	Frank Ashley, California
Equipment —	John Gunson, Summit County Rescue Group, Colorado
Mountaineering —	Bill March, University of Calgary, Physical Education Facility
Cave —	Tom Vines Appalachian Search & Rescue Conference

SEARCH AND RESCUE MAGAZINE, SPRING 1981.

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BUSH ON SAR

STAN BUSH, President
The Colorado Search and Rescue Board
2415 East Maplewood Avenue
Littleton, Colorado 90121

A UNIQUE SERVICE TO COLORADO AUTHORITIES IN EMERGENCY SITUATIONS

It might be any type of emergency — an injured climber, a drowning in a lake, a plane crash or a missing child — but whatever the situation, the first call for help is generally to the police department, fire department or sheriff's office in the area. This is true throughout the country. However, in Colorado, an organization exists that provides a unique service to authorities in emergency situations. This is the Colorado Search and Rescue Board.

The Board is NOT a command or control group. It is composed of representatives of the major paraprofessional search and rescue units in the state and serves as a vehicle for disseminating training information, forum for the critique of back country missions, resource for mission coordinators and research into new search and rescue techniques. It also arranges for teams from established rescue groups to travel throughout the state training new units and helping units improve their skills.

The Board provides invaluable support to the State of Colorado in maintaining two 24-hour answering services (one for aircraft - the Civil Air Patrol — and one for ground emergencies), keeping an accurate directory of search and rescue units, and has access to other information vital to an effective field mission (such as accurate weather reports, support units, etc.).

The Board also keeps in contact with search and rescue activities outside of the state — primarily through its relationship with the National Association for Search and Rescue — and contacts units needed for a mission when requested by local authorities. They also work closely with the Adj. General's Office, the Colorado Advisory Council for Search and Rescue and military establishments in the state.

The Board serves as a voluntary link between local authorities and search and rescue units as well as using the expertise of its members (many of them with over 400 search missions logged) to assist in improving field search and rescue operations. The Board is also working in the fields of advanced communications research, direction finding research, the use of cable for high angle evacuations, major back country air crash evacuation (the SAVE plan), mountain medicine, cold weather victim management, search and rescue equipment and has developed a training course for mission coordinators.

A single telephone call to either of the emergency numbers will supply whatever assistance is needed by a law enforcement agency in the state. This includes the services of the Civil Air Patrol, MAST helicopters, search helicopters from Fort Carson, Civil Defense support for major disasters, military personnel and equipment, communications equipment, mission coordinators and direct contact with all search and rescue teams.

When such requests are received, and teams are sent into the field — i.e. to search for a missing child on the slopes of Mt. Evans — the Board will arrange for a mission coordinator to go to the base camp if he is requested. He will have direct radio communication with the Board Emergency Operations Center in Littleton as well as radio links to search team bases. The Emergency Operations Center is activated on all multi-unit missions and is staffed by Board members, search specialists and amateur radio operators.

When a coordinator arrives at the scene of an emergency he reports to the authority who requested assistance. At that time he

will function in one of three ways. He may be on the scene only as an advisor and to channel requests back into the Emergency Operations Center. If requested by the local authorities he will serve to direct some aspect of the emergency operation — generally the coordination of the search and rescue team on scene. Under some circumstances he may be placed in complete charge of the operation. However, the decision as to how the coordinator will work is determined solely by the responsible authorities who requested assistance.

Through the coordinator, specialty teams may be secured to work such activities as: underwater search and recovery, aircraft search, emergency evacuation, mountain or flatland search, mountain and rock rescue, over snow search, avalanche search, emergency communications and mobile search. Dog search teams are also available and used extensively. The coordinator verifies that teams sent into the area are properly qualified, trained and equipped to handle the mission they will receive at base camp.

This hasn't always been the case in Colorado. Over the years there have been many attempts to develop such a program, but it has only been in the past few years that it has been fully implemented — largely through the efforts of SAR team leaders and with the strong support of former Adj. General Joe Moffitt.

As far back as 1960 the Rocky Mountain Rescue Group in Boulder — oldest SAR unit in the state — held a seminar at the University of Colorado dealing with emergency operations and planning. The outgrowth of this seminar was the formation of the Colorado Rescue Association. The association was an information gathering organization and developed the first directory of SAR units in the state. It also held regular meetings to work on coordination problems. However, without the direct support of state agencies it never fully developed its potential.

During this time, coordination of missions was a very casual procedure where the units that responded to a call would have one of their representatives serve as a coordinator. Many times there would be several "coordinators" working the same mission and it was quite confusing. It worked — as is evidenced by the record of rescue and recovery in Colorado — for over 98 percent of all injured or missing persons have been rescued or recovered, but there were many conflicts and even competition between SAR units.

Finally in 1969, Governor John Love instructed Gen. Moffitt to hold a series of meetings with key search and rescue personnel to see if some of the problems could be solved. The meetings involved participants from Civil Defense, Civil Air Patrol, U.S. Forest Service, State Forest Service, State Game and Fish, Rocky Mountain Rescue Group, Alpine Rescue Team, Arapahoe Rescue Patrol and many others.

From these meetings came the formation of the Colorado Search and Rescue Coordinating Board. This board included delegates from each of the member organizations with one delegate representing the search and rescue units in the state. The Board was chaired by General Moffitt and worked for two years to develop specific plans for the operation of SAR missions. However, it was found that the interests of the delegates to the board varied widely — from routine land management to police procedures. It was also found that the delegate concept was too unwieldy in that — eventually — the board could grow to well over 100 members if there was proper delegate representation from all parts of the state's emergency services.

As a result, General Moffitt appointed a special committee to work out a more efficient structure. The result was the formation of the present Colorado Search and Rescue Board.

The membership in the Board now includes most of the search and rescue units in the state. In addition to the central Colorado units these include units in such areas as Canon City, Walsenberg, Cortez, Steamboat Springs and Fort Collins to give good state coverage. American Red Cross, Civil Air Patrol, Fort Carson, St. Anthony Hospital's Flight for Life, National Ski Patrol, Rocky Mountain National Park and the Amateur Radio Emergency Service are among the 45 organizational members and law enforcement personnel regularly advising the Board.

Continued on page 15

ASHLEY ON SAR

by **FRANK ASHLEY**

Box 291
Culver City, CA 90230
(213) 633-7821

ANTI-VEHICLE BREAK-IN TIPS

It is a sad, but only too true, fact that as the urban population continues to seek wilderness experiences the criminal element follows.

This is especially evident in the great increase of vehicle break-ins at trailheads during the past few years. Let us face it . . . vehicles parked at a remote trailhead are easy pickings for crooks on any given Saturday night. Law enforcement and/or land management agencies rarely, if ever, patrol remote areas. The crook has all night to break-in the more desirable vehicles. Even if time is short for breaking-in, the professional car thief can do his dirty work in a matter of minutes.

There are certain things that SAR personnel can do to protect their property at a trailhead, while either on a mission or while backpacking for recreation. I would like to share a few tips with you.

1) Never leave your wallet in a parked vehicle.
2) Leave excess money, jewelry, and other valuables at home. Never leave car keys in, on, under or near your vehicle. Do not leave keys under hood on battery or engine. Do not leave keys on top of front tire. Do not leave extra key in magnetic "safety box" attached to vehicle.

4) Never leave house keys in vehicle as this is an open invitation to burglary of your residence. Carry all keys with you. Pin them inside a side pocket of your pack. Have a hiking partner or SAR team member carry your extra set of car keys.

5) If at all possible, avoid parking vehicle right at the trailhead. Try to leave vehicle near a ranger station, lodge, store, resort or other occupied structure. Be willing to walk an extra mile or two. Give serious consideration to leaving your vehicle in a nearby town (on a main street) and hitching a ride to the trailhead. Consider leaving your vehicle at a site in an organized campground, even if an overnight fee is involved.

6) Always assume that someone is watching you as you leave your vehicle.

7) Always have a locked gas cap.

8) Vans, truck camper, motorhomes, VW buses, convertibles, jeeps, station wagons, hard tops, and vehicles with side vents are more likely to be broken into. Attempt to leave these types of vehicles at places other than trailheads.

9) If driving a vehicle with a locked trunk space be certain to put everything into the truck and lock same. (*"Everything"* includes empty boxes and bags, tape decks, tape deck storage boxes, extra clothing, street shoes, CBs, contents of glove compartment, etc.) Leave nothing in sight in the car. Consider removing hub caps and placing them in the trunk. Leave glove compartment open.

10) Avoid having any types of decals, bumper stickers, or license plate frames that would indicate that you are a backpacker SAR person. (Examples: Sierra Club decal; "I'd Rather Be Hiking" license plate holder; "Prevent Forest Fires" bumper sticker.) Avoid having a college or university decal on vehicle. Avoid any type of "ecology group" decals and or bumper stickers on vehicle. Avoid having any type of political bumper sticker on vehicle.

11) If your hood can be opened from the outside without unlocking it from inside the vehicle, consider altering it so this can not be done.

12) Avoid giving the impression that you are either a hunter or fisherman.

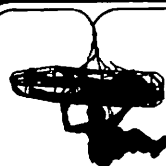
13) If possible, park on an incline rather than on a level spot.

14) If possible, park on dirt rather than on a paved spot.

A few parting thoughts. . . Forget about having any type of protection from law enforcement agencies and/or any land management agencies. The truth of the matter is that there is almost no patrolling of trailhead areas by peace officers at night anywhere in the country. Also, (and this will surprise many) the U.S. Forest Service does not consider the patrol of many trailhead parking areas to be their sole responsibility. . . The fact that vehicle burglaries do not receive wide publicity should not be taken as an indication that it is a minor problem. For law enforcement and land management agencies to give wide publicity to the problem would be for them to admit that a problem exists that they cannot control. That, my friends, is never done by any governmental agency! . . . Most (but not all) burglaries are committed by "locals." These "local" crooks know of all of the trailheads in their area. If, per chance, they do not know where the trailheads are, they need only to buy any of the more popular guide books of the area and find all of the trailheads listed . . . Trailheads that seem to be "in the middle of nowhere" really are not. An example of this would be Poopout Hill, one of the more popular trailheads in Southern California. Actually, tens of thousands of people live within 30 minutes driving time of that trailhead!

Good luck!

✻



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LETTERS TO THE EDITOR

WILDERNESS VOLUNTEER SEARCH & RESCUE TEAM
P.O. Box 770, Dryden, NY 13053

Dear Dennis:

I wanted to write a brief note, which I hope to elaborate upon with an article when we get the entire system working, about the new New York volunteer SAR radio system.

Because 155.160 is congested in this area with ambulances, veterinarians, school buses, and others, the New York State Federation of Search and Rescue Teams decided to utilize the frequency of 33.060Mhz in our state. Our team and the Oswego County Pioneer Land Search and Rescue Team have recently received our licenses, and since the mailing of the original applications was somewhat staggered, we anticipate that the other Federation teams will receive theirs shortly.

As I stated above, when the whole system is operational, I will write more in depth, however, I wanted to let people know that volunteer Search and Rescue has taken another important step forward in New York, with the implementation of the radio system on 33.060.

Best wishes always,

Hans L. Erdman, EMT-W Team Leader

INTERNATIONAL FILM BUREAU, INC.
332 South Michigan Avenue, Chicago, Illinois 60604

Dear Mr. Kelley:

I am pleased to announce for International Film Bureau's Safety several new releases. The readers of *Search and Rescue* may be especially interested in *Rescue Team Alert* and *First On The Scene*.

You may use this information in an appropriate column or you may wish to preview some of these films. Preview prints of films for review are provided free except return postage and insurance. To arrange a preview, write to me with your request.

If you would like further information on any of these new releases or any of our other safety films, please contact me.

Patricia Ulmer
Educational Representative

SHERIFF'S BARSTOW DESERT RESCUE SQUAD
P.O. Box 108, Barstow, California 92311

Dear Dennis,

I wish to convey my appreciation for your complimentary comment in the Fall issue of *Search and Rescue Magazine*. I was genuinely surprised of the interest that was generated towards the Eighth Annual Search and Rescue School, held last October, and of the earlier schools.

The October school was a resounding success comprised of about 300 students. Utah, Washington, Oklahoma, Arizona, Nevada, and of course California were represented. Most of the students were first-timers (with the exception of San Jose, a very dedicated and loyal team), who received information of the school basically by word-of-mouth. This impressed me a great deal.

Barstow will continue to sponsor the school every October on the first weekend (this year will be Oct. 2, 3, 4) so mark the calendar. As in the past, we will continue to offer the school at the lowest registration cost possible.

I wish to invite the comments from the readers of *Search and Rescue Magazine* that attended the school, either through this publication or to the Desert Rescue Squad address. We would welcome any suggestions to improve the curriculum of the school.

The Cinderella class, "The Twilight Zone," of course was the highlight of the program. Guest lecturers Dr. Bernard Barber, a

psychologist from Phoenix, and San Jose's own Clarissa Bernhardt, a noted psychic, held the captive audience at bay in a combined effort to discover the whereabouts of a still missing Susan Ramirez of Redondo Beach.

Though the class was not successful in locating Ms. Ran (not enough time was allotted), it was successful in the standpoint that hypnosis and para-psychology (psychic, etc.) can be effectively employed in a search.

Noted tracker Jack Kearney (this was Jack's eighth year at the school) stated in post-seminar corespondence, "The interrogation of those witnesses under hypnosis was the most fascinating thing I have ever seen at a SAR seminar, and everyone I talked to was equally entranced. . . If you ever do it again, it would be wise to allow the hypnotist an extra couple of hours."

Looking ahead to the Ninth Annual Search and Rescue School, Jack stated, "My crew and I kicked around the idea of the real need for night tracking, and we have decided to try and put something together for next year."

I wish to convey my thanks, also, to the following SAR commercial outlets: Ed and Pat Snyder of SARA, James Frank of the California Mountain Co., ZEE Medical of Upland, *Emergency Magazine*, and Marvin McLellan of DYNAMED.

If the readers know of any other commercial outlets who wish to participate at this year's school, please advise.

This year, Barstow will be back with the Ninth Annual Search and Rescue School, bigger and better than ever before!

Brian Zane/1080 SAR School Director

Dear Dennis,

Life around here is very hectic, but is starting to fall into place. I've been busy training my dog and trying to adjust to mountains with big fallen logs on them. Bear is doing better than I am. He runs ahead and then impatiently whimpers for me to hurry up as I scramble over logs. Enclosed is an absolutely dreadful picture me taken after our last search. It's so unflattering that I've been told to destroy the negative, but I love it as it gives some idea of how hard I've been working. Both Bear and I are very wet, and the jacket was clean that morning. (Just don't publish it!)

Bob has just been voted in as President of Search and Rescue Dog Association (SARDA). He's decided not to work a dog for a while and to concentrate on a good base camp setup and work on some of his pet projects like mapping and easier ways of doing so (that should benefit all SAR people) and equipment. He just doesn't have the time to spend training a dog while he's getting the business started.

The plastics business has been a long time getting started, but we should have dog hurdles to sell next month. After that Bob will be looking for outside consulting work in doing prototype design and tooling for skins for electronics companies. This was his specialty in Dallas. For example, he designed the hand-held wands that read typed price tags like you'll find in all the Sears stores.

Marcia Koenig
14255 - 130th PI NE
Kirkland, WA 98033

Editor: Congratulations Bob Koenig!

Dear Sirs,

I am very sorry for bothering you. I realize you must have a lot of things to do. What I wanted to know is if you could give me the address to a Search and Rescue Station. I live in Ohio but plan on moving to California and becoming a Search and Rescue Deputy. So could you please give me the address so I can write them and find out the requirements for the job.

Mike Eichenberg
5546 Burgess Drive,
Sylvania, Ohio 43560

Editor: Can any of you many readers of SARM help this young gentleman desiring to be of service in the SAR community? *

AIRCRAFT CRASHWORTHINESS

Now Inferior to that of the U.S. Automobile

National Transportation
Safety Board
Washington, D.C. 20594

Federal regulatory action to vastly improve general aviation aircraft crashworthiness — now inferior to that of the U.S. automobile — was recommended today by the National Transportation Safety Board.

The Safety Board called on the Federal Aviation Administration to require shoulder harnesses by December 31, 1985, in all general aviation aircraft built to accommodate them, and to impose an interim requirement that the harnesses be installed before registration of any such aircraft is transferred.

The Board said that despite voluminous studies and research projects showing advances in crashworthiness technology, many reported by FAA itself, FAA "is not taking aggressive action to improve the crashworthiness of general aviation aircraft."

"Required design standards for seats and occupant restraint systems in general aviation aircraft are far below those for the family automobile," largely because of regulatory action by Federal agencies toward safer cars, the Board said.

The Safety Board incorporated its latest crashworthiness recommendations in a safety report, *"The Status of General Aviation Aircraft Crashworthiness,"* on which it completed action today. The report reviews crashworthiness technological advances, and the histories of Federal crashworthiness regulation and Civil Aeronautics Board and Safety Board recommendations for improvements.

Design advances for safer aircraft interiors, improved seats and anchorages, and effective restraint equipment "are currently available to make most general aviation aircraft crashes survivable," the Safety Board said in its report today.



This example of Aircraft crashworthiness killed three persons 5-miles Northwest of Desert Hot Springs in the Little San Bernardino Mountains of California. Members of the Riverside Mountain Rescue Unit work to extricate bodies.

Photo by Jim Fairchild.

The Board noted that FAA's technical standards for safety belts and seats reflect industry standards which were last revised in 1950 and 1956. Further, FAA's 1977 regulatory requirement for general aviation aircraft shoulder harnesses applies only to newly manufactured aircraft, and covers front seats only.

The Safety Board said statistical measurements of the importance of improved general aviation crashworthiness underscore the Board's current concern. More passengers travel in general aviation than in airlines each year, according to estimates, and general aviation flying is rapidly increasing.

During the past decade, more than 100,000 general aviation aircraft occupants were involved in 39,458 accidents — 17.7 per cent of which were fatal accidents. And, based on 20-year aircraft life expectancy, it has been predicted that at least six of 10 general aviation aircraft now in production eventually will be involved in an accident.

In addition to its recommendation for shoulder harnesses in aircraft built to accommodate them, the Board recommended the FAA...

- Work with airframe manufacturers to develop and provide owners by December 31, 1982, with detailed shoulder harness installation instructions for existing aircraft which were not built to accommodate them.

- Require that shoulder harnesses be installed in these aircraft by December 31, 1985, and once instructions are available, in all such planes before their registration may be transferred.

- At established intervals, extend the application of all newly established crashworthiness regulations to newly-manufactured general aviation aircraft.

- Establish criteria by which manufacturers' current "delethalization" of cabin interiors, under an existing regulatory alternative to shoulder harnesses for rear seats, can be measured to determine effectiveness.


- Revise its seat belt, shoulder harness and seat requirements to achieve the crashworthiness improvements which the agency's own research has shown are needed.

- Establish dynamic test standards for occupant protection features of general aviation aircraft.

The Safety Board also reiterated two previous general aviation crashworthiness recommendations. Their goals are raising of "minor crash landing criteria" to "a level comparable to those produced by a moderate-to-severe crash landing," and a requirement for shoulder harnesses for all seats in all newly-certificated aircraft.

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HELICOPTER SAR— The Power and the Glory

CONCLUSION

This article is an excerpt from **Wilderness Search & Rescue** by one of this nation's outstanding authorities on mountain rescue, **Tim Setnicka**, edited by Kenneth Andriasko, published by Appalachian Mountain Club, 5 Joy St., Boston, MA 02108, \$12.95, about 656 pg., 150 photos, 175 drawings. Major sections on search theory, technical rescue tools and techniques, rescue systems, cave SAR, whitewater SAR, snow and ice and avalanche SAR and field medical considerations.

Helicopter Hoist Operations

Most military SAR unit helicopters have cable hoists (or winches). Occasionally a commercial helicopter, such as an Alouette Llama, is equipped with a hoist. A SAR organization with access to such a helicopter has increased capabilities, for the hoist makes it possible to extract a victim from or lower personnel to an area where the helicopter could not possibly land.

Helicopter hoists are either electric or hydraulic; the aircraft model determines the type of hoist system. For example, a Huey UH-1N has an electric hoist, while a CH-47 and an H-3 have hydraulic systems.

The hoist on the UH-1N is fastened to a vertical column, and has an arm or boom that swings out during the operation so that the hoist cable clears the aircraft's skid. One set of controls for the hoist is on the pilot's cyclic control, and a second set is mounted on a moveable hand switch, which enables a crewman to maneuver and watch the hoist operation through the side door. The system also has a guillotine-like cable cutter which is activated by an explosive charge fired electrically in case of an emergency. The hoist has about 75 meters of useable cable and a maximum load capacity rating of 270 kg. The electric motor must have time to cool down if used beyond a certain duration; this is an important limiting factor. The SAR team should know the basics of the hoist system which will be in use, so that logistics plans take its limitations into account, and allow a wide margin of safety.

Because helicopter hoisting involves cable and related mechanical devices, certain drawbacks are evident. The aircraft quality cable used has all the properties of any cable — high tensile strength, almost no dynamic shock loading capacity, immediate weakening when kinked or crimped. Therefore, a belay should always be employed during any hoisting operation as a backup system. The idea of using ropes from a helicopter may seem anachronistic, but so far a simple belay system has saved two lives when a cable broke in California. Investigation after the accident revealed that the cable had become kinked, ironically, during a safety inspection. In these required inspections, the cable is carefully run out and checked, centimeter by centimeter, for any damage. Somehow during this process, the cable became kinked and later, when two crewmen were being hoisted up, it broke about three meters from the hook. The 11mm belay line caught the fall in flight and saved their lives. This system has been regularly used by LeMoore Naval Air Station, which is responsible for most hoisting operations in Yosemite and Sequoia/Kings Canyon National Parks.

The basic system uses a 90 meter 11mm kernmantle climbing rope attached by carabiner to the deck rings (Fig. 14.7). The hoist system (not the cable, which has a much higher rating) has a rating of 270kg, and the rope one of well over 1800 kg, allowing a more than adequate safety margin. The rope is secured as far back from the hoist cable as possible, in order to help reduce the amount of spin of the hook, especially when the load comes close to the skids. (A tail rope to someone on the ground can also help.) The rope is then attached to a belay plate anchored in a self-equalizing fashion to three deck rings, each with a minimum rating of 450 kg. Sometimes the rope is just clipped into carabiners in the deck, and the system uses this friction for the belay system (Fig. 21.). The majority of the rope is kept stacked in a bag, from which it feeds during the operation. One end of the rope is attached to the "D" rings of the rescue device, and the other to a separate deck ring. A person belays as if he were belaying a climbing leader, and is tied

into the helicopter. If the hoist or cable fails, the people now held by the rope are flown to the nearest landing area. This system demands practice and coordination between SAR personnel and crewmen.

It is highly recommended that, if a group has not worked practiced with a particular helicopter crew or organization, a briefing be held before any operation, no matter how simple. This need not be a long or involved session. Those on the ground and in the air must understand a few hand signals, hook-up procedures, hoist capabilities, wave-off, and other emergency procedures. The obvious must be made more obvious. Training and communication are the keys to success.

There are a number of operations which can be performed with the hoist. For hoisting trained personnel, the *horse collar* is the fastest and simplest (Fig. 21.). The collar is a padded, horseshoe-shaped arrangement which is placed over a person's head and shoulders. It can be put on quickly, but is not safe for an unconscious or semi-conscious victim. Only those familiar with the collar should use one, since it is possible to come out of it.

The fishnet, or "screamer suit," is another soft vehicle for transporting injured, young, scared, semi-conscious, or unconscious people with no spinal or other major injuries (Fig. 21.). The main advantage of the suit is that one needs little training to ride in it and cannot possibly fall out of it under normal use. It is also more comfortable than a horse collar, can be adjusted to both vertical and horizontal positions, and easily carried in a pack or haul sack.

Occasionally an operation will involve hoisting someone in a Stokes litter or Neil Robertson stretcher. This is a bit more tricky, because the victim usually cannot assist himself during the hoisting, and it can be a problem to stabilize the litter while it is entering the helicopter. It is extremely important to know what type of hoisting system is to be used, and where the hoist is located on the helicopter. For example, a CH-47 has a square "hell hole" which will accommodate a litter in the vertical position nicely, but which is inadequate for a horizontal litter unless crewman reaches down, tips the litter, and works it inside the ship. A UH-1N helicopter has a hoist mounted by the pilot's side door which swings out past the skid. In this case it is much easier to get a horizontally raised litter in the ship. Know the limitations beforehand in order to insure speed, safety, and efficiency. And prepare the victim completely before the helicopter begins its hover pickup.

Most of the hoisting operations in the Yosemite area are performed with a UH-1N Huey helicopter (Fig. 21.). Its side-mounted hoist system has about 80 meters of useable cable. Stokes litters, either the solid or the breakdown type, are commonly used. A helicopter prerig is taken along on the rescue if there is any possibility that a helicopter hoist will be needed. The prerig insures that the correct distance between litter and hoist hook attachment (45cm in this case) will result, so that the litter can be moved quickly into the helicopter without hitting the floor of the ship.

A 90 meter 6mm tail rope is also carried along, and attached to the foot of the litter, to eliminate spinning and instability during raising. The tail rope is fastened with an oval carabiner; the ship crewman simply drops the rope down once the litter is aboard. The rotor wash keeps the rope from being sucked upward when dropped, especially if a weight such as a carabiner and knot is added to the end. One must be careful, however, if the helicopter is next to a wall or on the ground, because the air (and possibly the rope) will be recirculated as it bounces off of solid obstructions. Check the biner carefully for damage, or mark it.

The victim is tied into the litter securely, and has a swami waist belt, a climbing harness, or the screamer suit as a backup belay, clipped directly into the hoist hook. In addition, straps or long pieces of webbing crisscross the victim from head to toe, to inhibit movement and insure that the litter will be stable. Hands are tied in, in most cases, so they will not be injured on the helicopter as the litter is hoisted in.

When it is ready, the helicopter is called in, and the hoist hook lowered. If possible, the hook should be grounded to discharge any static electricity which may have built up. For speed, one person holds the hoist hook and its cable weight, while a second opens the hook and attaches it to the prerig on the litter. A third person stands by and guides the tail rope. The tail rope is never attached to anything on the ground, but simply fed directly out of the bag it is

Continued on page 10

FIGHT FOR LIFE

Photos by WARREN LEVICOFF
 311 McCormick Avenue
 Capitola, CA 95010
 (408) 425-7784 (Ans. Serv.)

VICTIM — Eddie Arko, 564 Stag La., Santa Cruz, Ca.

ADMITTED TO DOMINCAN HOSPITAL, Santa Cruz, CA. at 1:52 PM, Tuesday, February 19, 1980. Pronounced Dead 2:51 PM.

Victim and two friends entered storm swollen Soquel Creek (in Capitola, California) with surfboards at about 11:45 AM. . . Arko became trapped in a log jam and disappeared. . . Firefighters from Soquel and Capitola were called and later the dive team from the Santa Cruz County Sheriffs Dept. . . Rescuers found Arko unconscious, about ¼ mile downstream where the creek empties into the Pacific Ocean at about 1:35 PM. . . He was transported to the hospital by Santa Cruz Ambulance Service where he died at 2:51 PM.



L to R: Victim's brother (plaid shirt), Paul Babb - Volunteer Fireman & EMT Soquel Fire Dept., Victim Eddie Arko, Jim Wyatt - EMT Santa Cruz Ambulance Service.



In center is victim's brother (plaid shirt); Stan Love, Firefighter with Capitola Fire Dept. (giving CPR); Cathy Eck from Santa Cruz Ambulance Service (giving oxygen); action is taking place as they load Arko into the ambulance.

• • •

SKI YOU CAN DO IT

CIRCUIT TRAINING

A new way to bring some variety into your preseason exercising is to combine your exercises into a circuit. Mark four or five areas in the downtown park or the backyard woods where you can do different exercises such as sit ups, pull ups, push ups, and arm bands. When you want to start

sit ups

push ups

pull ups

arm bands

your training, do some warmup jogging for five minutes, then jog to your first station. Do the exercise you have designed for that spot (e.g. 20 sit ups), jog to the next station, do that exercise, etc. Repeat the circuit as often as you have time for. This is a good method for stretching those tight muscles enjoyably.

Technical assistance provided by Eastern Professional Ski Touring Instructors

HELICOPTER TECHNIQUES continued

carried in, to reduce the probability of snagging. The tail rope tender is safe from being pulled off the ground or ledge by the helo's sudden movement or an emergency; he or she is never connected to the helicopter or tied into the tail rope, and the helicopter is never anchored to the ground in any way at any time during the operation.

Once the hookup has been completed, the litter is simply raised while the tail rope stabilizes it. To accomplish this, the helo must move away from the area to decrease the angle between the tail rope and the ground. The crewman quickly pulls the victim inside and releases the tail rope.

It is essential to have clear communications between ground and air during the operation, via hand signals or radio. Voice communication under the hovering helicopter is made possible by an effective noise cancelling device, such as a covered earphone and a lip microphone. A radio system adapted from a standard military or other noise cancelling flight helmet system has been used with small handie-talkie 5 watt radios with good success. Nicknamed a "Snoopy" helmet, it is easily plugged into a local radio net and provides excellent communications for those working under a hovering helicopter. It is usually worn by the person coordinating the ground operation, who acts as a foreman.

A helicopter evacuation from a steep talus slope or a ledge or a wall is more complicated. The first consideration is the security of everyone involved by some sort of back-up belay system. No one should ever be unclipped, for all must be able to attend to a variety of tasks as the operation progresses, without having to worry about falling. With safety as the primary concern, the second consideration is that the helicopter should never be tied directly to the ground, and the third, that the victim should be secured or always belayed.

There are many ways to belay a litter while still not tying it firmly to an anchor point or using a belaying device (which would make quick emergency release impossible). One way is to have two people who are both clipped in or belayed hold and secure the litter (Fig. 21.) This is their only job; other rescuers are responsible for catching the hoist hook and attaching it to the litter. Again, it is best to allow the hook to ground itself by touching the rock to discharge any static electricity which may have built up in the cable. This method works well in terrain which is steep but not so precarious that one small slip might cause the litter to fall or slide free.

If the terrain is steeper, or the victim is on a ledge or ridge crest where there is little working space, one or two people can belay the litter with short slings, the tail rope, or webbing. One end of the sling is secured to the anchor point. The other end is run through the litter — usually through a carabiner on the side rail — and passed back to the belayer, who holds it taut.

The litter must be supported in some manner, often by the belayer's holding onto the sling or webbing, which can be readily released after the hookup or in case of an emergency. Make sure that there is less than one meter of sling between the belayer's hands and the carabiner on the litter. This prevents a knot from forming as the litter is lifted (in the same way that the end of a rappel rope can make an overhand knot if pulled too quickly).

A final sobering procedure is standard for most military operations. During a hoisting, a cable cutter or guillotine is within close reach of the crew. If anything goes wrong and a wave-off situation develops, the cable and any belay ropes will be cut without second thought in order to save the helicopter. The litter and attendants will be sacrificed, a possibility that one must acknowledge during the size-up and planning stages of the SAR.

Pendulum Maneuvers

The helicopter may not be able to hover directly above the target (ledge or buttress) on a vertical or overhanging wall. A pendulum motion can swing a haul sack or rescuer into the people on the wall. The bag is lowered on a rope or hoist cable and swung inwards (Fig. 21.); either by a crewman simply pushing and pulling on the rope, or by rocking the helicopter by moving the stick (cyclic). Rope is better than cable alone, because cable may scrape on the skids, causing wear, or may rub against the swedges on the hook. The load must be clipped into the ledge and unclipped from the rope swiftly. This method has been used to successfully swing a haul

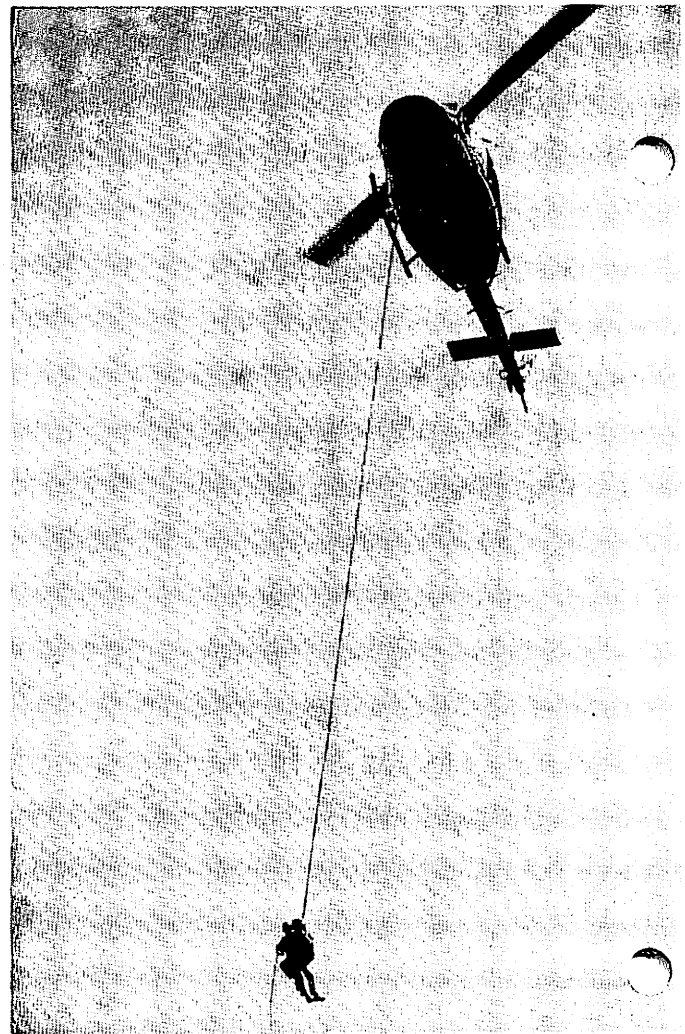
sack 12 meters horizontally to some climbers on El Cap Spire and Camp V ledge on El Capitan. Practice ahead.

Fixed Line Fly-Aways

Occasionally, a helicopter with a hoist is not available, or a load would stress the hoist system. In these circumstances, a static line fly-away using standard mountain ropes may provide the solution. In fact, using climbing ropes can greatly increase the safety margin. An example of such a system is the one currently employed by the U.S. Naval SAR crews at LeMoore, California (Fig. 21.). They use the Sky Genie military descending system.

The procedure is as follows. The first rescuer rappels out of the helicopter on a single rope in the standard manner. He takes the Stokes litter with him (assuming it's needed) by letting it dangle between his legs about three feet below. The second rescuer rappels out of the helicopter on a different anchor from the first, most likely self-equalize deck rings. The second rescuer also takes a belay line rigged on a third, separate anchor, and a third Genie to be hooked onto the litter.

Once on the ground, the two rescuers usually stay clipped into their rappel systems for safety. As soon as possible, they secure the victim into the litter or a screamer suit. The first rescuer now removes his rappel device from his harness, but leaves it attached to the rope, and clips it into the litter. The same rescuer then takes the third Sky Genie and attaches it to the rappel rope of the second rescuer and also to his own harness. Meanwhile, the second rescuer has attached the first rescuer's rappel rope to his double Sky Genie so both rappel ropes run to his system. Lastly, the second rescuer ties the belay rope he brought into the litter and first rescuer.



Fixed line fly-away; victim is underneath crew member, attached to both crew member's harness and rope.

Photo Kenneth Andrasko

MORE HELICOPTER TECHNIQUES

At the signal, both the rescuers and the litter are lifted and flown with the helicopter to a safe landing area, where all three are gently deposited. The rescuer on the bottom is set down first. He controls the descent of the other rescuer and the victim by holding or releasing tension on the ropes.

This system is extremely safe, with the minimum allowable force estimated at 1,000 kg, compared to 270 kg for the hoist system on the UH-1N. The odds of breaking three ropes are slight. The system utilized equipment and procedures normal for the U.S. Navy. In less complicated circumstances, one rescuer could do the same job if he were familiar with the system by rappelling down to the victim with a belay attached, outfitting the victim in a fishnet, and attaching himself to the victim by carabiners. The rescuer then signals for lift-off, and the two are flown to a nearby landing zone. This modified cliff evolution has been used on several actual SARs in Yosemite. In one, the crewman and victim were suspended over 100 meters below the helicopter.

Fixed and static line operations occur in the context of other SAR skills. Adaptation and practice are the keys to success. Another system has been used in Europe and Parks Canada for many years, with considerable acclaim and few accidents. It features two 46 meter climbing ropes knotted together at intervals and permanently clipped into a swivel fitting on the underside of the helicopter designed for this purpose. The ropes are tied into a special buckless harness that the rescuer wears. He stands in front of the helo as it gently picks him up like a sling load. Once airborne, the rescuer flies backwards due to air flow until he sticks one arm out horizontally and lets the air turn him around frontwards. The pilot can place the rescuer on a ledge where he can unclip, or the pilot can hover while the rescuer clips the victim into his harness. The two are then flown off.

All of these helicopter techniques, especially the last few are dramatic and dangerous. But helicopter use is not the panacea for SAR problems. We must guard against becoming "helicopter slaves," always depending on a helicopter to perform and support our operations. One final story to drive this point home.

One spring, two experienced rock climbers were carrying loads up to the East Buttress of El Capitan, planning to return and start the climb the next day. On the way down, they walked out on a slab to avoid some brush. The lead climber grabbed a manzanita branch and it promptly broke, sending him flying down the steep slab to the talus below. His partner scrambled down to him, found him unconscious, and went for help. When the SAR crew arrived, he was dead — probably killed upon impact.

Getting to the scene required a fifty-minute run up steep talus and a two or three pitch climb up loose fourth class rock. A military helicopter with hoist capability was required to start toward the area. When we found that the victim was dead, we radioed the helicopter that there was no hurry.

We decided to load the body into the litter and have the helicopter hoist it rather than spend the rest of the day lowering it down dangerous talus and carrying it out. The weather was fine, with little wind and azure skies. We briefed the details of the operation with the pilot and crew over the radio, and Paul Henry, a ranger who knew the precise location, rode along to direct the helo.

When ready, we moved the litter onto a large ledge which dropped off five or six hundred feet and placed it near the edge. Dan Sholly and I positioned ourselves to do the hookup and manage the tail rope.

The helicopter's rotor blades began to turn down in the meadow before the sound of the engine made its way to us. Once airborne, the helo spiraled upward, made a pass, and did a routine power check before it came in. The pilot gently eased the helo into a solid hover about eight meters above us, as there were no obstructions. The pilot was grinning at us, and we could see Henry preparing to pull the litter into the ship as it rapidly rose on the hoist cable.

The crewchief started to reach out and grab the litter when suddenly the helicopter rocked once to the left. We both thought that odd. An instant later, the engines suddenly altered pitch and the helo dropped without warning and banked hard to the left, narrowly missing us on the ledge. I saw the surprise of the crewchief's face as he braced himself and shot a glance at the pilots, before the helo fell from view. We watched in horror as the

helicopter described a complete descending spiral toward the stout pine and talus below.

"The Damn Thing's Crashing!! I CAN'T FRIGGING BELIEVE IT!" I yelled, pounding the ground with both hands. Sholly was yelling something equally rational into the radio.

Transfixed, we stared as the helicopter, now sliding rather than turning, glided another half circle and slipped sideways into the trees out of sight. The sounds of a tremendous crash followed hard on the roar of cracking, decapitated trees.

An instant later everyone was running madly down the fixed ropes and broken rock, rolling stones down on ourselves and burning our hands in haste. All we could think of was getting to the helicopter before it exploded, in case someone was still alive.

Suddenly a voice came over the radio. Henry's voice — "Stay clear! We're all clear of the ship, which looks like it's going to explode any moment . . . we're all OK except for a few minor injuries."

A miracle. Later, when we reached the group, I kissed both the pilot and Henry. They didn't complain.

That night, after many especially delicious beers, the pilot said that he suddenly lost power for as yet undetermined reasons. He adroitly banked left to avoid us and the ledge, and began autorotation procedures, only partially successful because of the confined space. Just before they piled into the trees, the corpsman aboard slammed the left side door when he saw the trees coming. The other crewman would have been thrown out the door. The crewchief was able to keep the fire down temporarily with a fire extinguisher while everyone evacuated, and helped the pilots out through their small access door just before the entire cabin burst into flames.

To this day no one knows exactly why the helicopter suddenly lost power. I'm not sure what Harry Reasoner, the noted television news commentator, had in mind when he spoke the following on February 16, 1971, but let it stand as a warning to those involved with helicopters in search and rescue:

"The thing is, helicopters are different from planes. An airplane by its nature wants to fly, and if not interfered with too strongly by unusual events or by a deliberately incompetent pilot, it will fly. A helicopter does not want to fly. It is maintained in the air by a variety of forces and controls working in opposition to each other, and if there is any disturbance in this delicate balance, the helicopter stops flying, immediately and disastrously. There is no such thing as a gliding helicopter." ❧

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A PERSONAL APPROACH TO BACKWOODS SAFETY

by KATHARINE BOYD
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Vail, Colorado 81657

It would seem that New England could not have much of a SAR problem. After all, there just is not that much backcountry in New England.

But what New England lacks in wilderness, it makes up for in population. In truth, there are sixty million people — mostly urban dwellers — living within a half day's drive of New Hampshire's White Mountains.

Greg Betts is one man who knows how badly the New England mountains mix with people who often fail to recognize their dangers. The 26-year-old resident of Durham, New Hampshire, has completed most of his 100 SAR missions in the New Hampshire wilderness.

He cared for the 12-year-old boy who had nearly amputated a toe with an ax while cutting firewood barefoot. He met the girl, now crippled for life, who slipped on some mossy rock and shattered a bare heel.

He repeatedly cared for too many hypothermia cases, people who had refused to believe that 100 mph winds and white-out conditions can exist on Mt. Washington in July.

"Ninety percent of the accidents in the mountains," said Betts, "could have been avoided."

His answer to statistics such as New England must face is found in one word: Education.

The weekend-long safety-oriented course Betts consequently developed and began to teach in the spring of 1974 has since reached more than 300 people in New Hampshire, Vermont, Maine, and Massachusetts.

Betts' personal credentials to teach his "Mountains and Woods Oriented First Aid and Rescue Course" are impressive. His desire to contribute a personal effort towards public backwoods safety education has combined well his two main interests of mountaineering and emergency medicine. Betts worked for three summers, 1970 to 1972, on the Appalachian Mountain (AMC) trail crew. Very often, he found his hand wrapped around the bar of a Stokes litter. In 1971, Betts graduated from New Hampshire's first EMT course, and has since worked on the Durham, N.H., Ambulance Corps. Another summer, he was the chief medic for the AMC's Pinkham Notch visitor center on Mt. Washington.

He has since become an EMT instructor, a member of the N.H. Heart Association faculty, and a state emergency medical services consultant. Betts is also currently working with the state of New Hampshire to develop a 30-hour post-EMT graduate course in mountain medicine.

Betts developed the format for his course with the viewpoint of a disillusioned student; he has always found dry, unstimulating teaching techniques to be unpalatable. By analyzing how not to teach, therefore, Betts himself is an excellent instructor.

"A person learns by hearing, seeing, and doing," he said. Therefore, Betts' 20 to 30 students get mini-lectures on shock, airway care, and hypothermia. Slide shows and movies on various topics are interspersed during the Friday evening, all-day Saturday, and Sunday morning class sessions. By having one or two assistants, Betts maintains a 10 to 1 student teacher ratio. In small groups, students also get a healthy dose of practical work in splinting, bandaging, and litter work, as well as discussions about complete patient exams, vital signs, and what equipment to carry.

But the best and most educational — part, according to students' critiques, is always the Sunday afternoon mock rescue, when the class must handle a mock wilderness emergency on their own. During this part of the course, the instructors fade into the background and watch. While the class asks last-minute questions and chooses first-aid and transportation leaders, Betts' assistant takes a volunteer mock-victim and a stooge (who "runs out of the woods for help" — and might well be shocky or hurt himself) at



least a mile from the trailhead. There, a problem realistic to the terrain is created.

While the victim is usually made to be more injured than any real SAR mission would want, class efforts have been consistently impressive. The mock rescue probably does more than any other part of the course to show students why they should always "stay safe" in the backwoods. They see clearly how terrain, weather, and time factors would make a real emergency less than a game.

In two years, Betts has taught his course to many college outing clubs, including those at Harvard, Boston University, Colby College in Maine, and several state schools. He has taught special outdoors-oriented groups, YMCA groups, and the Boy Scouts. Among his students have been MIT professors, doctors, other EMTs, several PhDs, as well as teenagers with no experience.

"My concern is that the students really know the things they learn about," said Betts. "I would rather a group know one thing well than not much about a lot of things."

Thus, one admirable quality of the course is its adaptability. After each student describes his or her mountaineering and first aid experience on Friday night, Betts and his assistants can then mold the depth of discussion each weekend to the group's ability. Betts' course is a refreshing approach to preventive SAR and public education. While he does not claim to teach more than first aid basics, Betts knows that by Sunday night his students are much more aware of potential backwoods dangers than they were on Friday.

And his efforts have paid off — at least once. Two of Betts' students saved two lives in March, 1975, by knowing how to treat the lost and hypothermic hikers they found above the Mt. Washington treeline one night, and bringing them safely down the next day. #

RESUME OF INTERAGENCY COMMITTEE ON SEARCH AND RESCUE (ICSAR) ACTIVITY

by **A. J. McCULLOUGH**, Secretary, ICSAR
U.S. Coast Guard (G-OSR-4/73)
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Six quarterly meetings were held from July '79 to December '80 during the one and one half year period. The following items were considered and action was taken as indicated.

a. Further considered the use of Emergency Location Transmitters (ELTs) by surveying the community of ELT users. Decided to press for a requirement for ELTs on all aircraft and urged the FAA to solve the technical problems associated with ELTs.

b. Transmitted the report on an **Emergency Response Communication Program** developed by an earlier ICSAR working group, to the Federal Emergency Management Agency.

c. Cleared the **Maritime Facilities Plan**, enabling it to become a reply to the House Appropriations Committee mandated study.

d. Appealed to the Department of Energy to have the standby Gasoline Rationing Plan amended to include in its definition of emergency services the category of Search and Rescue. The Plan was so amended.

e. Reviewed the National SAR Plan - 1969 including consideration for increasing state involvement with the Plan. Finalized for signature a revised National Search and Rescue Plan - 1981.

f. Supported the SAR community's interest in an emergency land mobile satellite communications capability and reiterated to the FCC and NTIA ICSAR's support for the use of frequencies approved by the WARC for the purpose.

g. Sent a letter to the Department of State concerning improvement in mutual cooperation between Mexico and the United States.

h. Sent a letter to the Department of State urging early United States Acceptance of the new International Maritime SAR Convention.

i. Cleared two technical papers for consideration by IMCO.

j. Welcomed the Federal Emergency Management Agency to full membership on the Committee.

k. Welcomed the Department of Labor to observer status on the Committee.

l. Explored ways of funding ICSAR projects.

m. Toured the Inland Rescue Coordination Center at Scott AFB.

n. Began consideration of SAR and its relationship to disaster relief.

o. Heard presentations on:

1. An experimental vessel traffic monitoring satellite system.

2. Mitre Corporation proposal on a satellite based maritime search and rescue system (SAMSARS).

3. Results of the 1979 World Administrative Radio Conference (WARC) held in Geneva.

4. Combat medical evacuation simulation and application of the technique to civil emergencies.

5. State of Nevada Mountain top ELT monitoring system.

6. ELT installation and mounting study and report of ELT performance in aircraft crashes.

7. Inland SAR in the National Parks and land over which the Department of Interior has jurisdiction.

8. Remote communications via the ATS-6 satellite.

9. Result of the second round of talks between the United States and Cuba on SAR activities.

10. Review of the SARSAT project including future plans and activities of participating countries (USA, Canada, France) and the USSR counterpart COSPAS.

11. Results of the International Maritime SAR Conference - 1979 in Hamburg, Federal Republic of Germany.

12. Review of a meeting of the Commission of the Californians on disaster relief SAR. ::

WHO ARE YOU WORKING FOR DURING A SAR MISSION?

by **ROBERT MATTSON**
7722 Benaroya Lane,
Huntsville, AL 35802

Are the following attitudes, statements and perceptions really true?

1. If you know what you're doing in SAR, you're not welcome at the mission base; you ask too many embarrassing questions!

2. If someone has developed an effective program for SAR, he will jealously guard against anyone "stealing" it!

3. The new "guy" in SAR doesn't feel he needs to study or to be trained, since he's a pilot already. He doesn't have time to listen to the old timers.

4. The "old heads" don't need to look at the books; they've been doing it their way for years. They don't keep up-to-date with new techniques, and certainly don't have the time to listen to some young fellow who's not even a pilot!

Do these things happen? Do these attitudes exist? I'm getting rumblings that they are commonplace. Why? Why? Why?

Who are we working for???

You dedicate hours of your time and much money for SAR. But, who are you working for? I'll give you some help. You're not working for the Air Force, HQ CAP, the wing commander, your unit commander, the emergency services officer, the state, the sheriff, the FBO, your family, nor even yourself.

If you think you are working for one of these, you're in the wrong business! You only have one person who really matters on a SAR mission, and that person is the **POTENTIAL SURVIVOR**. I use the word potential because if you don't work for the survivors they may never be saved.

Everyone involved in the SAR effort must feel the same way, and when they do, you will all work together for the benefit of the survivors. However, when people think they're working for themselves, place their position and role first, and refuse to cooperate with others, there will be **NO SURVIVORS**.

Working for the survivor does not mean that each person does his own thing; rather, it means that each individual acts in cooperation with others involved in providing aid to the survivor.

This may require you to keep out of the way, to allow others to assist. It may mean accepting a support role which is out of the mainstream of the total effort. It means sharing your knowledge with others; helping them to become more proficient. It means listening to others who have new and better ways to solve our SAR problems. New ideas and methods are coming into our SAR business very rapidly.

At other times it may mean working with, or for, someone you really don't care for. (This is difficult, but it may be best for the survivor.) We should **ALL** be working for the survivor **ALL** the time; there is no room for anything less!!! ::

"JAWS OF LIFE" MOVE FREIGHT CAR

by **SERGEANT M. E. WALDROP**
Crew Chief
Police Department Rescue Unit
216 Main Street
Greenville, Mississippi 38701

Photos by Greenville Police Department Rescue Unit

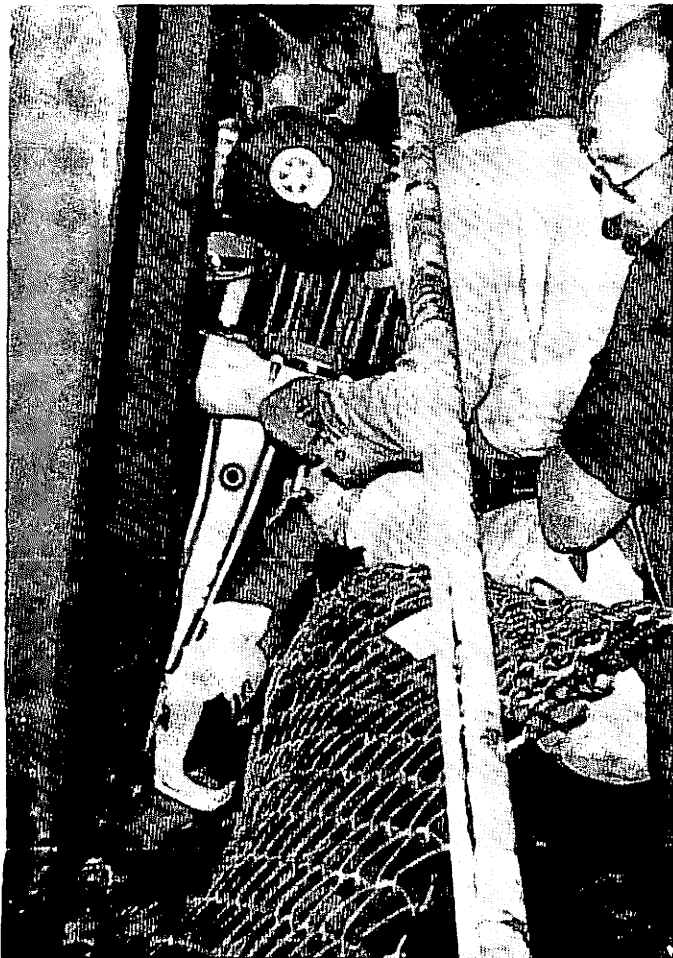
On April 10, 1979 at approximately 7:05 PM, the Greenville, Mississippi Police Department Rescue Unit received a call that a man had been pinned underneath a freight car that had derailed in the southern part of Greenville.

Upon arrival at the scene, it was found that a 31 year old brakeman on the train had been pinned underneath a freight car loaded with rolled steel wire cable. The brakeman's left foot and ankle were trapped under the freight car. The freight car was the last car of nine cars being pulled by the engine. The engineer of the train stated that they were attempting to climb a steep grade

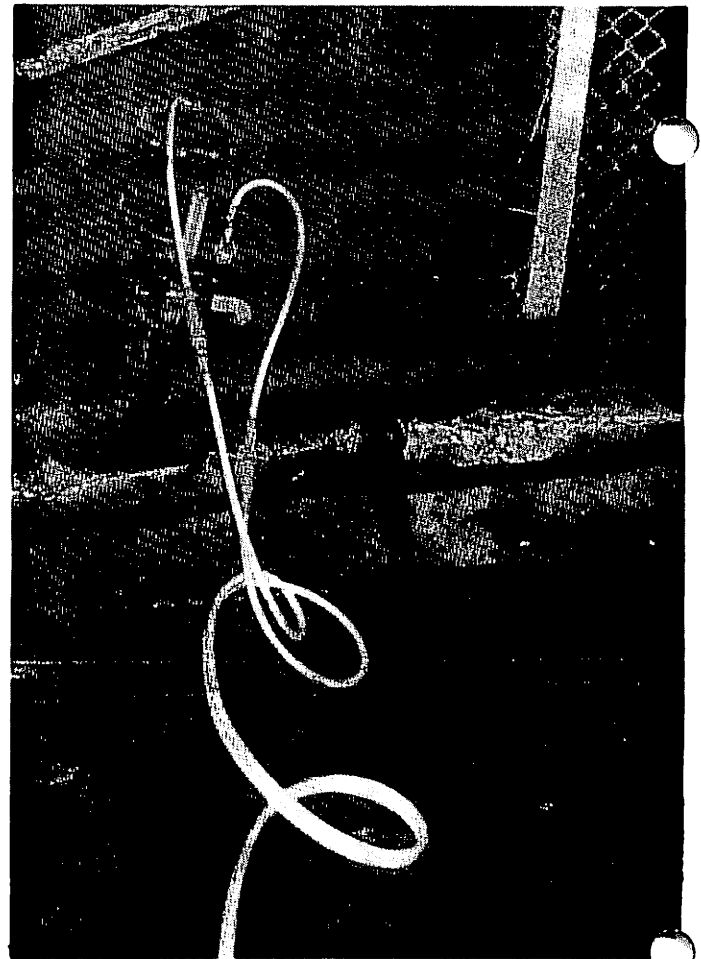
and further stated that they had been attempting to climb the steep grade for the third time, but the engine could not get enough traction to make it up the grade. The engineer stated that he heard the brakeman call over the radio for the train to stop and immediately he heard the brakeman begin screaming over radio for help, and that he was pinned beneath a freight car. At this time the engineer came to an emergency stop and called for help at the scene, at which time the Greenville Police Department Rescue Unit was called to the scene.

Units which were called to the scene were the Greenville Police Department, Greenville Police Department Rescue Unit, Greenville Fire Department, and Washington County Ambulance Service. Upon assessing the situation, the actions of the Greenville Police Department Rescue Unit, with the information obtained that the train derailment crane was approximately 150 miles away, the area of the derailment was so constructed that large wrecker cranes could not be brought into the area, no open flames due to the derailment being next to several flammable storage tanks, the Greenville Police Department Rescue Unit decided to attempt to move the freight car with the Hurst "Jaws of Life."

The brakeman's left foot and ankle were pinned beneath the freight car. As the extrication equipment and procedures were being prepared, the victim was being stabilized by E.M.T.'s from the Greenville Police Department Rescue Unit and Washington County Ambulance Service. E.M.T.'s stabilized the victim's left leg and also placed a tourniquet at approximately mid calf of the left leg in case it was required after the freight car was removed. The tourniquet was not required.



Extrication procedures beginning after stabilizing the victim. Rescue Unit crew members are beginning to apply pressure with the jaws of life. Note the close working space that they have. The victim's left leg can be seen just in front of the jaws of life.



Another view of the working area. The hose to the jaws is running over tar that has spilled out of some storage tanks. There are several flammable storage tanks also in the area. The pipes on this side of the jaws of life contain steam under pressure used to heat some tar storage tanks in the area.

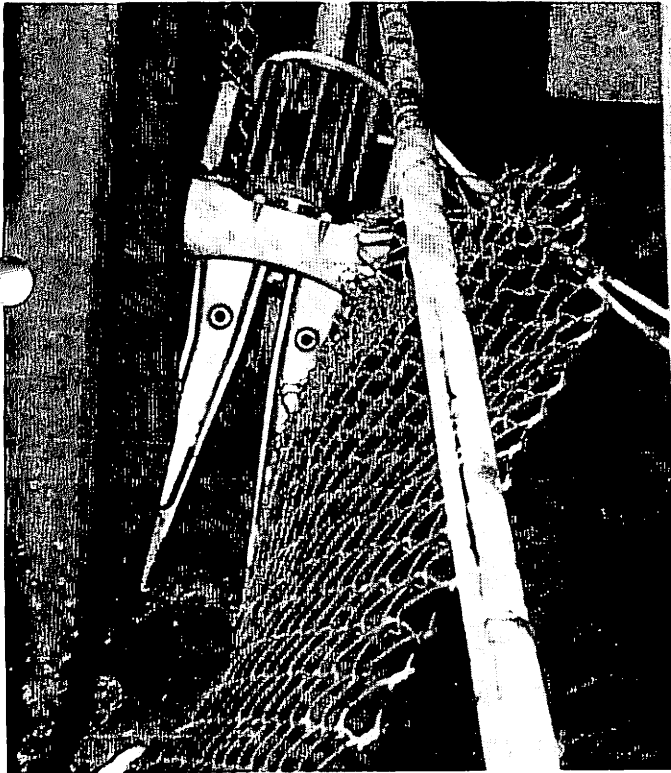
"JAWS OF LIFE" continued

Crew members of the Greenville Police Department Rescue placed the Jaws of Life into position, and as they began to apply pressure to the jaws of life, the victim who was conscious during the entire operation, stated that he could feel the weight of the freight car decreasing off his leg. The jaws of life moved the freight car approximately 16 inches from the victim's leg, which was enough distance to remove the victim.

After placing the victim in a stokes basket stretcher, the victim was transported by ambulance to a local hospital where he underwent emergency surgery. Surgeons were able to repair the partially amputated ankle and foot, and as of the writing of this report the victim has regained the use of his foot and ankle.

According to the engineer of the train, the weight of the freight car and the cargo, rolled steel wire cable, was approximately 210,000 pounds. The only piece of equipment used in the extrication procedure, due to the limited working space, was the Hurst "Jaws of Life." Even though working at approximately 8 times its maximum capacity, the jaws of life came through the extrication procedure without any malfunctions or deformities.

Total time of extrication involved with the rescue attempt was 35 minutes. ■■



Another view of the close working space the crew's were confronted with. The chain link fence was cut by the freight car when it derailed.

BUSH ON SAR continued

The Board elects a set of nine directors to manage its activities and these directors serve as an advisory committee for all SAR activities. Collectively, the directors have served as coordinators ... over 1,500 missions and have considerable knowledge of the resources available in the state.

However, the great strength of the Board is in supplying information to new units, exchanging information on techniques and procedures, critiquing the missions around the state during regular monthly meetings and training new units.

Unit representatives meet monthly in a central location to discuss problems and work on Board programs. New Units make presentations at these meetings and become acquainted with the board. At the same time the Board learns of the capabilities of the new unit and, thus, will have much better relations with the new unit when it becomes involved in a major mission.

The board is working on an 'area concept' where each major area of the state will have a division that will meet regularly. This will help to improve coordination and avoid the problem of some members having to drive over 200 miles to attend a meeting. Divisions will then work on problems of local interest, but will keep in touch via bulletins and combined meetings.

Member units believe that:

1. The prime consideration must be the victim and units must respond and function with this in mind.
2. Units must not respond without a request from the duly constituted authority responsible for the mission.
3. Units must work under the direction of the proper authority and in a manner approved by such authority.
4. Units must be self-sufficient for a minimum of 48 hours in the field and must not accept pay for any services rendered although support from local authorities in the form of lodging, food, fuel, supplies, etc. is appreciated.
5. Units must work under the designated mission coordinator and handle the mission assigned to them — if they accept it. They must not accept a mission they do not believe they can handle.

Over the years the Board has developed certain policies for its operations. Among them are:

1. Search and rescue missions must not be competitive. Teams and individuals should be selected for the mission based upon need, training, equipment and experience.
2. All participating units should be credited for their work and no unit especially emphasized in a "find." (If the victim is not in the teams assigned area they cannot find him!)
3. Units must not belittle the efforts of others, but should attempt to learn their strengths and weaknesses and assist them in improving.
4. Critiques of missions should "tell it like it is," but this should be done constructively and all must understand so that no offence is taken.
5. If a unit is unable to handle a mission, or phase of a mission, they should say so, rather than attempt that which is beyond them.
6. "FIRST IN" unit on a mission should do the patterning and conduct the operation unless an outside coordinator is requested. However, they must not hesitate to call for additional help if it will accelerate the mission or it is anticipated that additional help will be needed.
7. There should be a close relation between the field units and the Board to keep the Board advised of the status of the mission and potential additional support needs as well as requests for specific teams and/or specialized gear.
8. Units should not hesitate to respond immediately to a request from ANY valid source, even though there is insufficient information or they are turned back enroute because of a find. Additional information can be acquired while the first elements of the unit are responding.

A major need in all areas of the country is the coordination of SAR efforts between police, fire, military, state and paraprofessional search and rescue units. The Colorado Search and Rescue Board is proving to be an effective vehicle for such coordination. Many states have a very effective coordination system. For others, the Colorado plan is worth considering.

Accepting the concept that the needs of the victim are paramount in all SAR operations, some form of a state board becomes an essential element in any effective SAR System.

EMERGENCY NUMBERS

Colorado Wing-Civil Air Patrol — 781-8976
Colorado Search & Rescue Board — 794-2304 794-1551 ■■

THE NEUTRON WEAPON

Fact and Fiction

Reprinted from International Civil
Defense Organization Bulletin
10-12 chemin de Surville
CH-1213 Petit-Lancy
Geneva, Switzerland

Periodically, the danger of radioactivity as a whole and nuclear armament in particular, stirs up public opinion, especially in the industrialized countries. At present, to the feeling of insecurity aroused by the "classical" atomic weapons (by fusion or fission) should be added the anxiety brought about by the new neutron weapon. The latter is at the center of heated discussions based rather on an emotional approach of the problem — with conflicting reactions and confusing explanations — than a sober detached analysis, taking into consideration the facts only and not extrapolations or suppositions, with little or no supporting basis. These facts are of a scientific and military nature, and for the layman, it would seem useful to present, in simple language, the mechanism of the neutron weapon, known as the new weapon, as compared with the mechanism of the "classical" atomic weapon.

Two experts have studied this present-day question and it might be of interest to hear their explanations and conclusions.

Prof. Otto Huber, President of the Swiss Federal Commission on Radioactivity Monitoring, in a report on the subject *Radiation protection, Alarm Committee of the Federal Commission on Radioactivity Monitoring and cooperation with Civil Defence*, the report being listed in the ICDO Library under No. OIPC/12297 (text in French; 8 pages, 8 illustrations, 4 tables), develops the question of protection against "classical" radiation hazards to which should currently be added the new neutron weapon.

He states that the sword of Damocles hanging permanently over our head is not the nuclear plants, nor radioactive waste, but rather the atomic weapon with its initial radiation and its residual radiation, without consideration of the thermal radiation and shock waves. But these last two, according to the circumstances of the explosion, can be as dreadful as the subsequent effects of the radioactivity spread over large expanses of territory Protection is afforded against radiation emitted by atomic weapons, which consists mostly of alpha, beta, and gamma rays, thanks to the absorption properties of the material used for shelters and the buildings above them. Radiation diminishes in intensity with the distance from the point of explosion, and also with time. This for the "classical" atomic weapon.

As to the neutron bomb, a fission detonator, probably Pu-239, emits several tens of millions of degrees of heat and thereby causes the fusion of Deuterium and Tritium nuclei which results in the creation of He-4 and the release of high-energy neutrons. The primary neutronic radiation is in this case the main effect of this weapon, especially if the shock wave on the ground can be considerably reduced by means of a sophisticated technical design and miniaturization, and by choosing an adequate explosion height (a few hundred metres). As neutron radiation is especially dangerous for living bodies, this weapon can be used first and foremost against human beings. Tanks are the primary target, through disablement of their crews. Since the neutron "shower" lasts only a few fractions of a second, all immediate protection measures would be too late, as opposed to what happens with

conventional atomic weapons. Thus, compared with a conventional atomic weapon of the same calibre (1 KT) the distance within which tanks will be put out of commission immediately and non-protected persons will receive lethal doses increases in the case of the neutron bomb by approx. a coefficient of 2 whereas the side effects decrease by a coefficient of 6.

It is well known that under the effect of the shock with the hydrogen nuclei the neutrons release a great amount of energy. This is why water is used as a moderator in light-water reactors. Concrete, with its moisture content, as well as earth and wood, are good radiation absorbers. On the other hand, as iron and steel provide efficient protection against gamma radiation but allow neutrons to pass through, it follows that a combat tank crew is badly protected behind its armour-plate. But on the contrary, military protection works, often made of wood and covered with a layer of earth, and especially Civil Defense shelters and structures, provide satisfactory protection. Improvised earthen and sandbag walls, in particular, offer good protection against neutrons. This new weapon shows the extent to which it has become necessary, even in Switzerland, to follow closely the development of new weapon systems in order to be able to take the required timely measures; in this regard a small neutral State has no advantage.

Therefore, the opinion of Prof. Huber is that the development of the neutron weapon does not require a change in the Civil Defense concept and in protection structures. The harmful biological effects for man are fundamentally the same, whether from the conventional atomic weapon or from the neutron bomb. Treatment of the victims lies with the Health Service. In order to be able to extrapolate the development of the disease and the medical care required by it, it would be necessary to know the values of the radiation doses, bearing in mind the difficulty of measuring these values, especially in the case of neutrons.

The military aspect of this comparative analysis of the dangers of classical atomic weapons and neutron weapons also forms the subject of an article by Colonel L. C. Schreuders, member of the National Defence College in The Hague, and previously in command of the Royal Netherlands Military School; this article was recently published in the *Journal of Civil Defense*, of the American Association of Civil Protection at Starke, Florida, and deals in the first place with the difference between the effects produced by the A-weapon and those produced by the N-weapon.

The existing nuclear standard fission weapon which provokes heat, air pressure and residual radiation, the latter mainly in the form of the ill-famed "fallout," have little effect on armoured vehicles due to their compact construction and their armour. It is only the 5% direct radiation penetrating through the armour plating that would be effective in eliminating the tank crew. Near ground zero the effect of this radiation is limited compared to the side effects. The undesired side effects, i.e. heat, air pressure and fallout, penetrate far outside the radiation area, causing casualties among the civilian population and damage to buildings.

The facts: when making use of an A-weapon the crew of armoured vehicles is put out of action as a result of radiation; the undesired side effects of heat, air pressure and fallout can cause casualties among the civilian population and damage buildings (diagram 1).

The neutron weapon whose official name — Enhanced Radiation Reduced Blast — already indicates that a different distribution of power is made, i.e. more radiation and less air pressure (blast) among other things. Diagram 2 shows that direct radiation is six times stronger than that of the A-weapon while the side effects are considerably less. They are even so slight that they fall within the radiation area thus greatly reducing losses and damage from air pressure and heat inside this area of radiation. The chances of residual radiation are also considerably reduced.

The facts: the crew of the armoured vehicles is also put out of action due to radiation when the N-weapon is used; undesired effects (heat, air pressure and fallout) are avoided so losses or damage are not caused outside the radiation area.

As it is not the intention, when using a tactical nuclear weapon, to put out of action just one tank but a tank formation it will be essential, in view of the limited radiation effect of the lethal initial radiation, to use an A-weapon of rather high KT-value (explosive power) if the desired effect is to be reached. If an N-weapon with its much more powerful radiation is used a much smaller KT-value will suffice.

The author of this article goes on to give a practical example of a supposed conflict taking place in Europe. Following the outbreak of the hostilities the armed forces are unable, after a few days, to prevent a further penetration of the attacker with the aid of "conventional" means. In order to avoid a total collapse of the defense system, the military authorities are forced to release the use of tactical nuclear weapon. The Commander now has available a certain number of weapons both A-weapons and N-weapons.

Supposing that the town "X" has already been captured and it is decided to make use of a nuclear weapon on the attacking armoured formation as a breakthrough threatens to take place near the town "Z", it will be essential to make use of a 10 KT A-weapon to be able to bring to a halt this formation advancing in a strip of 1.5 kilometres x 1.5 kilometres. The formation can consist of either about 30 tanks or 30 armoured personnel vehicles with 12 tanks (diagram 3).

Effects: the radiation of this weapon will put out of action the crew of the armoured vehicles to a radius of about 0.7 km; the air pressure (blast) will also cause destruction in a radius of 1.3 km, i.e. heavy damage and casualties in the town "Z"; the heat can cause fire and burns in a radius of 2.3 km, i.e. fires in both the towns "X" and "Z"; there is every chance of fallout.

If, on the contrary, a neutron weapon is used one can suffice with a 1 KT neutron weapon (diagram 4). Effects: also in this case the radiation will put out of action the crews of the armoured vehicles to a radius of about 0.7 km; air pressure and heat will not cause any losses or destruction outside this area, neither in town "X" nor in town "Z"; the chances of fallout are extremely slight.

To conclude, Colonel Schreuders makes the following remarks: to the enemy tank crews it does not make any difference whether they are out of action as a result of radiation of a 10 KT A-Weapon or by that of a 1 KT N-Weapon; if a nuclear weapon is used the civilian population is better off by the use of a 1 KT N-weapon than by the use of a 10 KT A-weapon (diagram 5 indicates this difference schematically). #

A-WEAPON

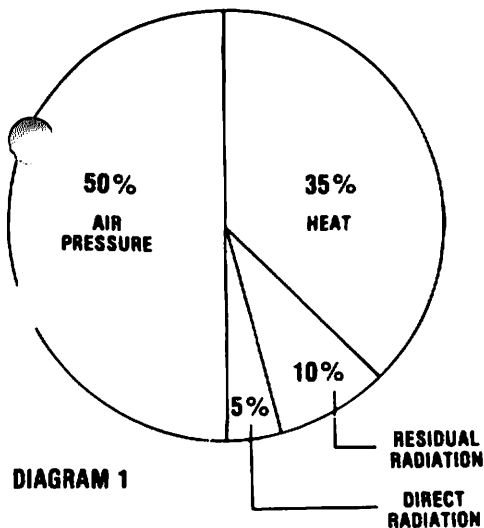


DIAGRAM 1

NEUTRON WEAPON

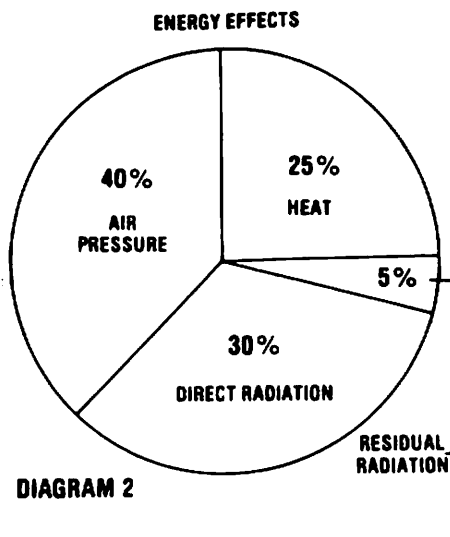


DIAGRAM 2

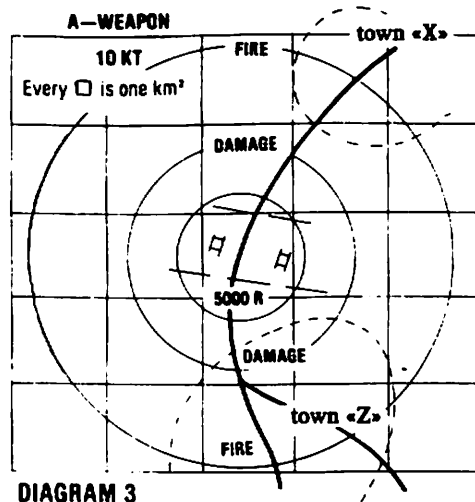


DIAGRAM 3

NEUTRON WEAPON

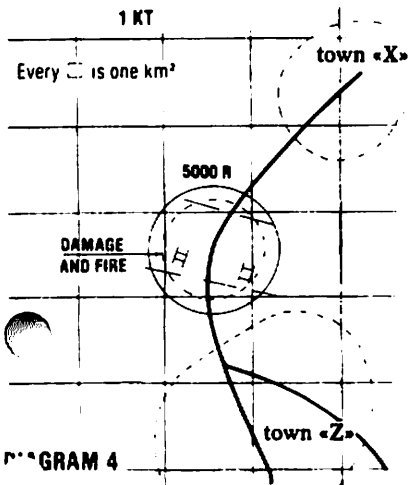


DIAGRAM 4

A-WEAPON

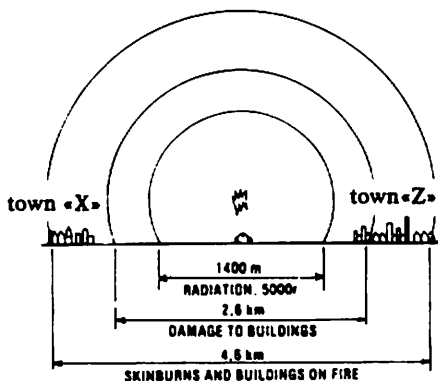
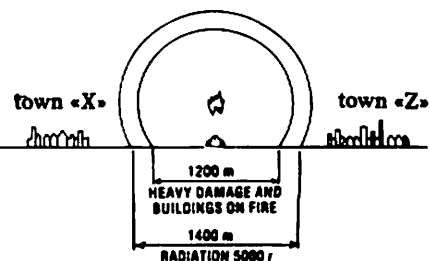


DIAGRAM 5

NEUTRON WEAPON



FINDING ANDY

by SGT. TED BEUTER
Linn County Sheriff Department
P.O. Box 5034
Cedar Rapids, Iowa 52407

At 2245 on July 5, 1977, the Linn County Sheriff Dept. received a call from Mrs. David Pasker of Rural Route Ely, a small farming community, 4 miles southeast of Cedar Rapids. Mrs. Pasker reported that her 3½ year old son, Andy was missing from the farm home. Lt. Dennis Fiser, the Patrol Shift Supervisor responded to the scene to gather more information on the missing lad.

Lt. Fiser found that Andy and 2 or 3 other small children had been playing hide and go seek on the edge of a large cornfield near the farm buildings. At about 2130, shortly after dark, it was discovered Andy was missing. The cornfield, which was about 75 acres of 7 to 8 foot thickly populated corn, was where the boy had last been seen. Lt. Fiser requested that the Linn County Sheriff Dept. Search and Rescue Team was activated.

Sgt. Ted Beuter, officer in charge of SAR and Deputy James Marchese were the first to respond to the scene. While enroute, Sgt. Beuter requested that a SAR Bloodhound be sent to the scene.

Upon arrival, Sgt. Beuter, and Dep. Marchese attempted to cut sign, but were unsuccessful because of the variety of tennis shoe tracks left by the youngsters playing hide and seek during the evening hours. (Andy was supposed to be wearing tennis shoes — as were his brothers.) Soil conditions were poor, as were the lighting conditions. At 2345, Special Deputy Sheriff Steve Waddell arrived at the scene with his Bloodhound "PIKE."

Dep. Waddell, Sgt. Beuter, and Dep. Marchese entered the large cornfield as other members of the Sheriff's SAR Team arrived at

the scene. All buildings were searched by the Team members, and a perimeter was set up around the cornfield. Dep. Waddell worked the bloodhound until 0245 am, with no success.

The temperature at the time of the search was 80° — and the humidity was very high — causing the bloodhound to tire easily. Youngsters had played in the field for a long period of time, and the hound had difficulty getting past the very edge of the field.

At 0245 am, about 15 Deputy Sheriffs were on the scene, and additional assistance was requested from the Ely Volunteer Fire Dept. At 0300 am, a line search began, using the 15 deputies, and about 15 firemen. The searchers found, as did the bloodhound team, that going was very tough. The corn was about 7 to 8 feet tall, planted close together in rows only 30 inches wide. During the line search, it was easy for the searchers to lose sight of the searcher in the very next row. The line search continued in the maze of corn rows until 0800, with a total 75 acres of corn being covered.

A child lost in a cornfield in Iowa may not seem like an emergency with persons not familiar with the area. There are not a lot of dangers — no cliffs to fall over, no man-eating animals lurking about, and there was no deep water for the youngster to fall in — none of those obvious dangers you might expect — but there were dangers.

Iowa farmers surround their fields with barb and woven wire fences — and many out-of-state adult hunters have gotten tangled in one of those — a 3½ year old could be strangled by such a fence — taller than him. Could the youth have suffered an injury and be laying in the field bleeding to death — not an unrealistic thought. Does a 3½ year old know that there are no monsters in the dark — could he run himself to exhaustion — being chased by his own fears.

Yes — an emergency did exist.

At 0800, two helicopters from Linn County Civil Defense-Cedar Rapids Police arrived at the scene, and attempted to spot the lad from the air. This was unsuccessful — the copters couldn't even see adult searchers in the field because of the thick corn.



The boy, Andy Pasker being reunited with his mother. Note Jesus loves me T-shirt.



Dep. James Marchese and the thickness of the corn. A searcher in the next row is not visible.

At 0815 another line search was organized with Sheriff Deputies, and Ely Volunteer Firemen. The searchers started covering the area which they had covered during the darkness of night. At 0900, the 3½ year old boy, Andy Parker was found asleep in the corn row about ¾ of a mile from his home. The boy was tired and very dirty from his night in the cornfield, and streaks on the boy's dirty cheeks from his tears could plainly be seen, but the boy smiled when the searchers picked him up.

The lad was reunited with his joyful mother who immediately displayed the writing on the T-shirt her little boy was wearing, "Jesus Loves Me." ❖



Myself standing on one of our rescue trucks keeping track of the line searchers with one of the Civil Defense-City Police Helicopters in the background.

SEARCH AND RESCUE PIGEONS JOIN RANKS OF UNEMPLOYED

MIAMI (AP)— In an attempt to cut costs, the U.S. Coast Guard is abandoning Project Sea Hunt, an innovative program that used trained pigeons in search-and-rescue missions. The program was dropped Wednesday, October 1, 1980, as the Coast Guard began its new budget year.

It was emphasized that dropping the program had nothing to do with the birds' effectiveness. "The pigeon is better suited to visual searches than man," said James V. Simmons, research scientist in charge of the project.

Scientists say pigeons have a wide angle of acute vision — 80 degrees, compared to 2½ degrees for man — and can see objects the size of a life vest in choppy water at a distance of three-quarters of a mile. The birds also see floating objects faster and more consistently than Coast Guard lookouts, scientists say. The pigeons went through a year of extensive training in helicopters. Three birds were perched in a plexiglass bubble and were taught to peck an electrical switch when they saw the color called "international orange" that is widely used for emergency equipment. The birds faced different directions, and the pilot steered in the direction faced by the bird doing the pecking.

Although the officials maintain that cutting the program will save money, not everyone in the Coast Guard agrees. "The development costs are cheap," said Cmdr. J. E. Foels, of the Barbers Point Air Station. "And where else are you going to get superior searchers to work for chicken feed?"

Omaha, Nebraska, *World Herald*, Oct. 5, 1980

4 YOUTHS EXPLORING OLD COAL MINE SUFFOCATE

SAN FRANCISCO— Freak weather conditions unleashed a carbon dioxide buildup in a long abandoned coal mine about 40 miles northeast of here, suffocating four teenagers who had gone exploring on one's 17th birthday, authorities said. The bodies were found by search teams nearly a mile inside the mine near the Black Diamond Mines Regional Preserve in an area that once was California's largest coal mining region and remains honeycombed with old mines dating back to the mid-1800's.

As the youths apparently groped deeper into the mine shaft, equipped only with ropes and two flashlights, their breathing became labored and they became disoriented and probably lost. Officials said that the victims likely were not aware of any danger "until they were really in distress." By then, it was too late. And when the search teams wearing air packs reached them, they were sprawled dead on the mine floor. "It looked like they just lay down and went to sleep," a member of the search team said.

John Waters, director of mine rescue for the East Bay Regional Park District, said the carbon dioxide usually is held in check deeper inside the mine shafts by "thermo-dynamic" action of differences in temperature between air inside and outside the mine. But he said the temperatures apparently equalized while the youths were inside, sucking the heavy, colorless and odorless gas upward and engulfing them. Contra Costa County Sheriff's deputies said the entrance to the mine had been covered by a concrete block but vandals had chipped away at it over the years until there was a narrow space big enough for a person to crawl through.

The boys were reported missing late Wednesday night. Their customized blue van was found about a mile from the mine entrance by a sheriff's deputy and the father of two of the victims, and searchers reasoned that they had followed a trail to the mine entrance. Efforts to recover the bodies were hampered by the rough terrain inside the mine and the carbon dioxide continuing to drift up through what one sheriff's deputy described as a "catacomb or shafts."

In the late 1950's, the region was a bustling coal mining area, but coal mining was halted in 1902 after 4 million tons of coal valued then at \$20 million had been dug out of the hills.

Reprinted from the *Los Angeles Times*

BAHAMAS EXPLAINS DELAY IN RESCUING STRANDED HAITIANS

MIAMI (AP) - Nov. 10, 1980— A Bahamian government vessel will leave port today to begin the rescue of 102 Haitians stranded on a tiny island for more than a month — a mission delayed because ships were busy with "other priorities," Bahamian spokesman Bill Kalis said by telephone from Nassau. "It was a matter of getting the government tender scheduled to pick them up." The Haitians were spotted Oct. 9 by the U.S. Coast Guard, which notified Bahamian officials. Five Haitians are believed to have starved before the Coast Guard discovered them and began weekly drops of food and water. The Bahamian government has jurisdiction over the island. Kalis said the rescue ship will probably reach the Haitians on Tuesday. "There were other priorities for the (Bahamian) government tender that is used for inter-island transport of construction materials. . . taking illegal immigrants back to Haiti" and other jobs, Kalis said.

The Los Angeles Times

RESERVE UNITS IN SPACE SHUTTLE PROGRAM

SELFRIDGE ANGB, MI— The rescue and recovery units assigned to the 403rd Rescue and Weather Reconnaissance Wing at Selfridge ANGB, Mich. will play key rolls in the upcoming Space Shuttle launch. The Reserve units will be involved in rocket recovery, contingency astronaut recovery at both launch and landing sites, and standby for recovery on the planned touchdown.

The 305th Aerospace Rescue and Recovery Squadron at Selfridge will have a C-130 assigned to the solid rocket booster recovery support part of the launch. The reservists will be stationed 150 miles downrange from the launch site at the Cape Kennedy Space Center and home in on the booster by using on-board VHF beacons and then wait for the pickup to be made.

The booster sections and the parachutes as well will be refurbished and reused in future Shuttle launches.

Two other 130's from Air National Guard units will be involved in the launch. They have been assigned ramp alert roles.

The 301st ARRS at Homestead will have a HH-3 helicopter assigned to the contingency support operations. The helicopter will carry two Reserve pararescuemen, three Navy frogmen, and a doctor on board in the event the astronauts decide to abort the launch in the initial phases and would come down near the space center. Two other Reserve squadrons, the 303rd and 304th, will have a part in the contingency support operations in the event of an unplanned landing on the West Coast. Both units are also involved in the planning for the scheduled touchdown at Edwards AFB, California 54 hours after launch.

Members of the 301st ARRS will begin training for their part of the operation in December. The Space Shuttle is targeted for a March 14 launch.

U.S. Force Reserve, News Release

FIRST EMT-PARAMEDIC PROGRAMS ACCREDITED

The American Medical Association's Committee on Allied Health Education and Accreditation has approved, for the first time, two Emergency Medical Technician - Paramedic (EMT-Paramedic) Programs for national Accreditation. The announcement was made by Norman E. McSwain, Jr., M.D., Chairman of the Joint Review Committee on Educational Programs for the EMT-Paramedic.

Approved and granted accreditation was the EMT-Paramedic Program of Eastern Kentucky University, Richmond, Kentucky; and the EMT-Paramedic Program of Daniel Freeman Hospital, Los Angeles, California.

Both the Daniel Freeman Hospital and the Eastern Kentucky University EMT-Paramedic Training Programs had to meet

nationally established Essentials and Guidelines to be eligible for Accreditation. As part of the Accreditation process, comprehensive applications must be submitted as well as two day on-site evaluation by three experts in the field of emergency medicine, EMT-Paramedic education, and field operations.

Eastern Kentucky University's EMT-Paramedic Program Medical Director S. Delbert Fritz, M.D., and Program Director John A. Rasmussen, EMT-P.; as well as Daniel Freeman Hospital EMT-Paramedic Medical Director Walter S. Graf, M.D., and Program Director Winnie Hobbs, voiced considerable pride in being the first two EMT-Paramedic Programs in the United States to be Accredited.

Dr. McSwain, Chairman of the Joint Review Committee, stated that the Accreditation of these two programs represented the culmination of over three years of planning and implementation of the accrediting process for EMT-Paramedic Programs.

The Joint Review Committee, which is sponsored by the American College of Emergency Physicians, American College of Surgeons, the American Psychiatric Association, the American Society of Anesthesiologists, the National Association of Emergency Medical Technicians, and the National Registry of Emergency Medical Technicians, is that body which makes specific recommendations on Accreditation of EMT-Paramedic Programs to the AMA's Committee on Allied Health Education and Accreditation. The Collaborating Sponsoring organizations provide volunteers to staff the Joint Review Committee; trained Site Evaluators to provide on-site review of each EMT-Paramedic Program; and financial contributions to support most of the activities of the Committee and the Accreditation process.

In announcing Accreditation of the first two EMT-Paramedic Programs, Dr. McSwain stated. . . .

" This begins an era of standardization for EMT-Paramedic training programs throughout the United States. This will mean that the education received by the EMT-Paramedic in an Accredited program will be accepted quality training no matter in what area the person n. serve. Further, Accreditation will help assure the quality of patient care delivered by the EMT-Paramedic."

Joint Review Committee Executive Secretary, Jeffrey S. Harris, noted that the Committee is now finalizing the review of three additional programs, with an Accreditation decision expected before March 31, 1981. With more than 350 identified EMT-Paramedic programs in the U.S., Harris estimated that at least 100 would receive Accreditation by the end of 1983.

Jeffrey S. Harris, REMTA, Executive Secretary, 11-17-80
Joint Review Com. on Ed. Programs for the EMT-Paramedic

BECAME LOST SEARCHING FOR GODSON

ESCONDIDO Battered and weary after wandering lost for five days in the Palomar Mountain Wilderness, Eric Enell said he didn't regret setting out alone to search for his missing godson, whose body was found in the rugged terrain. "I'll be criticized in some circles for it and probably rightfully so," said Enell, a burly 44-year-old private investigator and retired police captain who was rescued by searchers. "It wasn't the smartest thing I've ever done, but it's something I'd do again," he said.

Enell, 18 pounds lighter after five days spent eating acorns and warding off freezing nights wearing a rain-soaked parka, recounted his ordeal from a wheelchair during a press conference at Palomar Memorial Hospital where he is recovering from minor injuries. Enell said that when he set out alone he tracked several fresh footprints that he believed belonged to Jim Beveridge, his 9-year-old godson. The boy had disappeared the day before, after becoming separated from two brothers during a hike in Palomar Mountain state Park. "I thought it was worth a chance going down after him and spend a night in the cold rather than leaving him out there," Enell said.

The boy's body was discovered about a mile from where Enell was found a day later, ending San Diego County's largest single search effort. More than 200 searchers were involved. After becoming disoriented in the rain and fog, Enell said he

NEWS AND RUMORS — continued

abandoned his hunt for his godson and concentrated on returning camp. "I knew I was in trouble but I wasn't worried," said Enell, adding that at one point a sheriff's helicopter hovered overhead but could not see him because of the thick brush. He hiked to high ground in hopes of rescuers spotting him, but instead ended up spending the night watching the lights of Escondido in the distance. He returned to lower ground in search of water the next day and by that time had become so exhausted he could barely move, he said. Enell said he walked about 200 yards before collapsing from dehydration and exhaustion. He was so weak he could barely talk when searchers found him lying in a desolate creekbed.

"I'd just like to thank everyone," said Enell as he wheeled out of the press conference and was taken back to his room.

by Mark Forster, *The Los Angeles Times*, Feb. 15, 1981

U.S. COAST GUARD SUSPENDS SEARCH FOR MISSING BOATERS

GUAYMAS, MEXICO (UPI)— The U.S. Coast Guard has suspended its search for nine people aboard a sailboat that broke apart in stormy seas while on a "survival adventure" for troubled teen-agers in the Gulf of California. "We suspended our active search at 5 p.m. (PST) pending further developments," Lt. Bob Majewski, spokesman for the Long Beach Coast Guard search and rescue headquarters, said.

The battered 25-foot sailboat containing the body of a teenager, Bernard Efer, 19, of Baden, Pa., washed ashore near Punto Chivato on the east coast of Baja California last week. Fishermen later found a second body, identified as Terry Mullaney, 32, of Tucson, Arizona, the skipper of the ill-fated boat. The sailboat, with seven teenagers and two instructors aboard, was one of four boats sponsored by Vision Quest Inc., a Tucson-based counseling agency for troubled youths, that set sail one week ago from Guaymas on what was expected to be an 18-hour passage to Baja California.

Lompoc Record (Lompoc, Calif.), Dec. 2, 1980

4 FIREFIGHTERS FACE PROBE IN SAN FRANCISCO DEATH

Four San Francisco firefighters are under investigation for reported misconduct after sitting through a four-hour abalone dinner while a woman burned to death in an apartment house a half block from their locked and dark fire station. Six other firefighters who also were at the dinner, including a battalion chief, face similar charges.

The incident, which occurred Nov. 23, 1980, was disclosed by the *San Francisco Chronicle* and substantiated by Fire Chief Andrew Casper. Mayor Dianne Feinstein immediately asked for a full-scale investigation by the Fire Commission and called the episode "a shocking dereliction of duty." She said she had heard "no more serious allegations" against the San Francisco Fire Department in the 10 years she has been in city government.

Casper said if the men are found guilty, they could face penalties ranging from month's fine to a temporary suspension or firing.

As detailed by witnesses to the fire and by a report from the department to the mayor, the four firemen locked up their station in the city's Sunset District the evening of Nov. 23 and drove a pumper truck across Golden State Park to another station in the Richmond District to dine on abalone gathered by other firefighters the previous day. While they were at dinner, a four-story apartment house near their station caught fire and a bartender in a bar across the street, after trying to telephone for help but finding the phone out of order, dispatched a customer to the station. He found it dark and locked. In the meantime, the bar-

tender, Loretta Earley, said she and several others grabbed towels, soaked them in water to protect their faces and made two trips to the top floor of the burning building to guide residents to safety. She said she saw a woman in a rear fourth-floor window, Louise Jenkins, 66, a widow, trying to escape the flames. "It looked like she was pushing at the window," Earley said. "Then I saw her turn from the window."

"I presumed she ran for the door. I got up to the third floor and I was screaming at her to go back inside so we could get her from the fire escape. Then there was an explosion and everything went."

It was "conservatively 10 minutes" after the blaze erupted that the first fire trucks, from a station more than a mile away, arrived with hoses and ladders, responding to the neighborhood fire alarms that had been triggered. The right side of the building by then was in flames.

The four firemen normally based at the neighborhood station heard of the fire as they were driving back across the park when a "second request" for help was broadcast by fire dispatchers. Casper said if the men had been at their post, they could have responded to the fire "within one to three minutes." He said the incident was "very disturbing to me. . . They responded, but they responded late," Casper said.

William Endicott, *The Los Angeles Times*, Dec. 18, 1980

SURVIVING EXTREMES

During the ferocious heat wave that hit the South last summer, a man was admitted to an Atlanta hospital with a body temperature of 115.7 degrees Fahrenheit. He should have died, but after medical treatment he recovered. In Chicago some years ago a woman lay on a sidewalk all night in sub-zero weather. Her body temperature fell to 60.8 degrees. Yet after doctors gradually raised her temperature, she too survived. Doctors have cooled people to 40 degrees to cure a disease and revived them unharmed. Such cases are exceptions. Ordinarily, the body jealously maintains its temperature at 98.6 degrees. A prolonged drop to 90 degrees or below or a rise to 110 degrees or higher usually results in death. How, then, can average people—the survivors, say, of a plane crash—hope to keep alive in an infernolike desert or in the Arctic's sub-zero cold?

In the blazing hot desert, the best move is to conserve the sweat there may be up to four quarts of it an hour—that your body pours out. Cover yourself, like Bedouins do, with layers of loose-fitting clothing. The porous layers assist the slow evaporation necessary for cooling, yet maintain a cushion of moist air next to the skin so that you will sweat less. One U.S. Air Force survival manual estimates that in the desert you need at least four quarts of water a day. Dig a hole in the sand and line it with canvas and a few cool pebbles and you may collect up to a quart of morning dew; or watch for circling birds and animal tracks—they often point the way to water holes.

In arctic surroundings, loose layers of clothing are also the key to survival, since too tightly layered clothing restricts the circulation of the blood. You should remove some layers during exertion and replace them afterward to prevent undue sweating, which invites freezing.

Survival in cold water depends on many factors. The temperature of the water is only one. Others include body size, fat, and activity in the water to name a few. Large people cool slower than small people. Children, because they are small, cool faster than adults. By swimming or treading water, a person will cool about 35% faster than if remaining still. The "drownproofing technique" requires putting the head into the water and will cause a person to cool about 82% faster than if floating still with the head out of the water. An "average" person, wearing light clothing and a PFD, may survive 2½ to 3 hours in 50 degree F. water by remaining still. This survival time can be increased considerably by getting as far out of the water as possible and covering the head. Getting into or onto the boat or anything else that floats can be a real life saver.

Reprinted from *Science Digest*, Jan-Feb, 1981

PILOT HELPS RESCUE MT. ST. HELENS VOLCANO VICTIMS

As a Marine Corps pilot Jess Hagerman flew rescue missions in Vietnam. Now the member of Pilgrim Church, Puyallup, Wash., is helping Army National Guard crews search for bodies of persons who died in the May 18, 1980 eruption of Mount St. Helens in Washington.

A captain in the National Guard, Hagerman was activated when the volcano exploded. In the days immediately following National Guard teams rescued 130 people. Thirty-five persons are listed as missing and presumed dead. Thirty bodies have been recovered.

"It's a bad job," said Hagerman. "It's one no one enjoys doing. But it's a job that has to be done. The satisfaction was in finding survivors."

The day of the eruption Hagerman and another guardsman airlifted to safety the first two people found alive. They were loggers on contract to Weyerhaeuser Co., for whom Hagerman works as a pilot. The next day Hagerman helped rescue a family of four. While searching on the ground, Hagerman often found himself in hot ash up to his knees. He found the blast area more devastating than any he had seen in Vietnam. "The volcano could be going on for the rest of our lives and our children's lives," he said. "The ash and dust could be with us for a long, long time."

Both President Carter and officials of the U.S. Dept. of Agriculture have lauded William Clossner, Shepherd of the Hills Church, Stevenson, Wash., for his work in the aftermath of the volcanic eruptions. Sheriff of Skamania County, Wash., Clossner's jurisdiction includes Mount St. Helens. He set up roadblocks, developed evacuation procedures, maintained a list of victims and communicated with the media. In thanking Carter for a personal briefing and tour of the stricken area Carter wrote, "As president I am proud of the work you have been doing."

Because of the uncertainty about further volcanic activity, Lutheran Social Services of Washington has undertaken a four-part disaster response program. The program includes distribution of emergency funds from the Lutheran Council in the USA, establishment of a pastoral crisis counseling network, coordination of special offerings from statewide Lutheran congregations and distribution of donated food through the Salvation Army. Gene Colburn, LSSW disaster coordinator, said anxiety levels are increasing because of the frustration, anger and feelings of helplessness being experienced by many victims. "Many people feel helpless and hopeless, impotent in trying to deal with the disaster. They're angry — angry at God, the church, nature and other people. Many feel that God has abandoned them," he said.

An important church role is to facilitate both immediate and long-term assistance and to "be sure that no one slips through the cracks" as government and other aid is given," Colburn said.

The Lutheran, September 17, 1980

RESCUERS BRACE ICY SLOPES, DARKNESS FOR INJURED HIKER

Fourteen members of the Montrose Search and Rescue Team logged a rough and chilly night Sunday, December 7, 1980, spending over 7 hours on icy slopes rescuing a 17-year-old hiker from Palisades High School. The girl was hiking with family and friends near Little Jimmy Camp in the San Gabriel Mountains, from the junction of Highways 39 and 2 near the Angeles Crest Highway.

The girl's tennis shoes slipped on the icy slopes, rescuers said, and she fell 200 feet down a 45-degree embankment, breaking her ankle and possibly her right shoulder.

The Montrose team received a radio call around 4 p.m. Sunday. Originally, they had planned to use a copter to bring the wounded hiker out but the darkness and weather prevented a landing nearby. Paramedics were flown in as close as possible and hiked the rest of the way.

After an hour's drive and another hour hiking in, the crew reached her. The four paramedics rendered emergency first aid and rescuers spent the next two hours carrying her out on a litter in minus 10-degree weather. She was flown to Verdugo Hills Hospital.

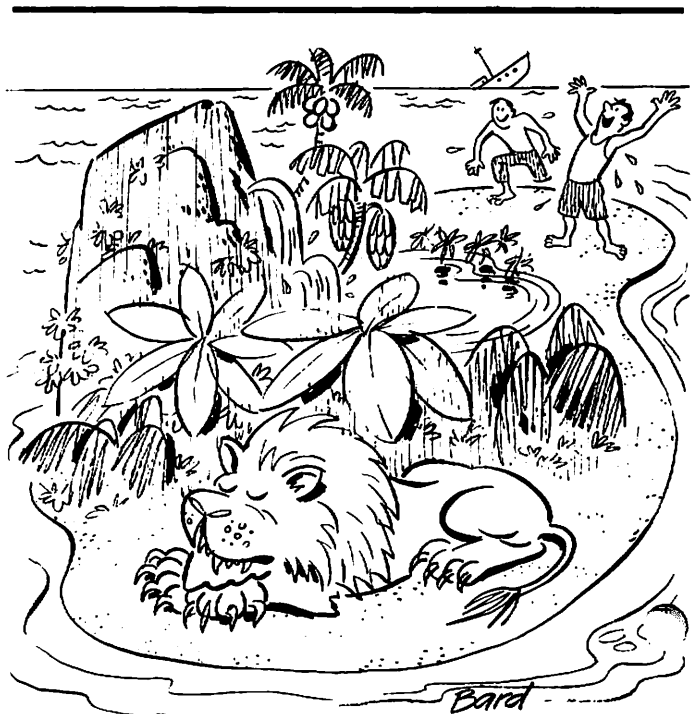
This is the 67th call for Montrose team so far in 1980, said Deputy Marvin Cheyno of the Crescenta Valley Sheriff's Station. The team, composed entirely of trained and certified volunteers from Foothill communities, covers a 240-square mile area. Sunday's rescue was near the borderline of their territory.

DESERT SURVIVAL BOOKLET UPDATED

After two years of being out of print, an updated revised edition of the Desert Survival booklet, originally distributed by Maricopa County Civil Defense and Disaster Organization, is now available. Loss of Federal matching funds two years ago and tightening County budgets were the cause for discontinuation. This booklet has been distributed to over 20,000-40,000 citizens each year for 16 years.

DARES (Desert-Alpine-Reserve-Emergency-Services), a non-profit volunteer organization, involved only with Preventative Search and Rescue, or survival training, decided this booklet was too important a public service to lose, so they have rewritten it and have published a new issue. DARES are affiliated with the State Division of Emergency Services and with the Maricopa County Sheriff's Office as a training Group. Emphasizing a common approach to emergencies, general suggestions are given to help yourself out of trouble in the out-of-doors; and by good preparation, how to safely enjoy the desert. Additional subjects covered include flash floods, city emergencies and what to do if a loved one doesn't come home from an outing.

Helen Georges, DARES President, emphasizes this pamphlet is an important public service and the fee charged goes for reprinting costs, while any profit is earmarked toward purchase of additional training films, available for loan to the general public. This booklet — *Desert Awareness* — is available for \$1.50 from DARES, P.O. Box 28362, Tempe, Arizona 85282.



"FRESH WATER! FRUIT! COCONUTS! WE'RE SAVED!"

NEWS AND RUMORS *continued*
MAN SURVIVES ORDEAL IN DESERT

Moathy Moore, handcuffed and blindfolded, was standing on the edge of a cliff when one of the men shot him in the head at point-blank range.

The force of the gunshot hurled him over the edge and he tumbled 540 yards before coming to rest on the canyon floor. Then he heard more shots coming from above. One of the bullets hit him in the left arm. Moore crawled under a rock overhang and waited. He heard the start of an engine and listened as the sound faded in the distance.

He had been beaten, shot and robbed by two men he did not know and left to die in a remote and rugged section of San Gorgonio Mountain, north of Palm Springs. Three days later, Moore was found by a cowboy out cutting wood on Christmas Eve. "I was given the best Christmas a man could have — my life," Moore said from his bed at Palm Spring's Desert Hospital.

Moore rents a cabin in the resort town of Forest Falls, directly south of Big Bear Lake in the San Bernardino Mountains. He does odd jobs and repair work to support himself.

Moore, 26, was at his cabin when the two men jumped him from behind. They knocked him down, beat him, kicked him mercilessly, blindfolded him and handcuffed him behind the back.

They took the \$150 Moore had in his wallet and then loaded him in some sort of vehicle. The two men then drove him to the canyon, shot him and drove away. Moore was somewhat reticent about discussing his ordeal because, after all, the two men were still out there. He was to undergo surgery later that day to remove more bullet fragments from his head. But he did say a few things and San Bernardino sheriff's Lt. Jim Cansler filled in some of the other details.

"I just started walking," Moore said. "I slept under rocks and trees." After the two men left him for dead, Moore, still handcuffed, got to his feet and wandered until he found a dry creek bed. He followed it until he found a dirt road and eventually came upon his rescuer, identified by Cansler as Douglas Whitham, "an older guy who's a cowboy in Mission Canyon." Whitham, in turn, took Moore from Mission Canyon to Palm Springs, where he was treated for his gunshots, multiple bruises, dehydration and exposure. Sheriff's deputies were searching Moore's cabin and the canyon where he was shot for clues in the case. The two men are being sought on charges of armed robbery, kidnaping and assault with intent to commit murder.

Cansler said he thought it was Moore's attitude that brought him through, that after all he had endured, he could still joke with investigators. "After all that, he seemed in good spirits," Cansler said. Reprinted from the *Los Angeles Times*, Dec. 17, 1980

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